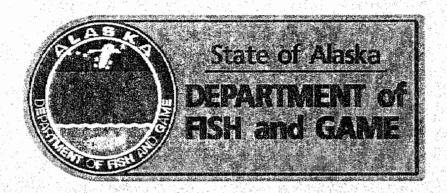
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`ABUNDANCE, AGE, SEX, AND SIZE STATISTICS FOR SOCKEYE, CHUM AND PINK SALMON IN LOWER COOK INLET, 1999



by
Edward O. Otis,
and
Mark S. Dickson

Regional Information Report¹ No. 2A00-15

Alaska Department of Fish and Game Division of Commercial Fisheries, Region II 333 Raspberry Road Anchorage, Alaska 99518-1599

February 2002

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AUTHORS

Edward O. Otis is a Research Biologist for Lower Cook Inlet salmon and herring for the Alaska Department of Fish and Game, Division of Commercial Fisheries, 3298 Douglas Place, Homer, AK 99603-8027.

Mark S. Dickson is a Fisheries Technician IV for the Alaska Department of Fish and Game, Division of Commercial Fisheries, 3298 Douglas Place, Homer, AK 99603.

ACKNOWLEDGMENTS

Many fishers and tender operators cooperated in this project by allowing department personnel to collect samples aboard their vessels while deliveries were being made. Sharon Delsack and Daisy Morton collected commercial catch samples and pressed scales. Josephine Ryan and Janice Higbee collected Delight Lake escapement samples. Wes Bucher, Lee Hammarstrom and Mark Dickson, flew aerial surveys. Mark Dickson aged the scales.

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Abstract

Aerial and foot surveys were used to estimate the 1999 sockeye *Oncorhynchus nerka*, chum *O. keta*, and pink *O. gorbusca* salmon escapements in the Lower Cook Inlet management area. Age, length and weight samples were obtained from six sockeye salmon stocks. A total of 476,779 sockeye, 7,941 chum and 1,140,488 pink salmon were harvested in this management area. Another 101,173 sockeye, 178,149 chum, and 409,439 pink salmon were estimated in the spawning escapement. The dominant ages of sockeye salmon throughout Lower Cook Inlet were 1.2 and 1.3. The proportion of sockeye salmon males ranged from a low of 38.0% in the China Poot Bay sample to a high of 56.0% in the Delight Lake escapement sample. Sockeye salmon ranged in mean size from 483 mm in the Mikfik Lake sample to 568 mm in the commercial catch at Desire Lake and from 1.49 kg to 2.85 kg from the commercial catches at Mikfik and Desire Lake respectively.

KEY WORDS: Age, chum salmon, escapement, length, Lower Cook Inlet, pink salmon, Oncorhynchus, sex, sockeye salmon, weight.

INTRODUCTION

The Lower Cook Inlet (LCI) Management Area for commercial salmon fishing is composed of all waters west of Cape Fairfield in the Gulf of Alaska, north of Cape Douglas in Shelikof Straits, and south of Anchor Point in Cook Inlet. The area is divided into five management districts: Kamishak Bay, Barren Islands, Southern, Outer, and Eastern (Figure 1); fishing does not occur in the Barren Islands District. Purse seines and set gillnets are the only legal commercial gear types for salmon. Entry into the commercial fishery was limited in 1972.

In 1961, the Alaska Department of Fish and Game (ADF&G) began documenting LCI commercial catches of the five Pacific salmon species that occur in Alaska. Sockeye *Oncorhynchus nerka* and chum salmon *O. keta* catch sampling for age, weight, length (AWL) and sex began in 1970. AWL data between 1970 and 1986, and between 1988 and 1997, has been summarized by Schroeder (1984, 1985, 1986), Morrison (1987), Yuen et.al. (1989, 1990, 1991, 1992), Yuen and Bucher (1994a, 1994b, 1995) Otis, Bechtol and Bucher (1998), and Otis and Dickson (1999a, 1999b, 1999c). There was no catch-sampling program in 1987. Aerial and ground escapement surveys of pink salmon *O. gorbusca* began in 1960, chum salmon in 1974, and sockeye salmon *O. nerka* in 1969. Annual escapement data are summarized in annual management reports for the Lower Cook Inlet Area (eg., Hammarstrom 2000).

Historically, fishing for a single species within a bay or drainage has lasted three to six weeks. Sockeye salmon fisheries begin as early as June while pink and chum salmon fisheries begin in July. Both fisheries end in August. Commercial fishing for chinook *O. tshawytscha* has begun as early as May and fishing for coho *O. kisutch* has extended into September. Current management strategy is structured around established fishing districts and sub-districts to facilitate management of discrete stocks. Commercial harvests are managed to meet predetermined escapement goals and to obtain adequate escapement for all run segments of a stock.

The purpose of the Lower Cook Inlet salmon catch-sampling program is to collect sockeye and chum salmon AWL data from purse seine fisheries that target discrete stocks. These single-stock fisheries normally account for over 90% of the total sockeye and chum catch from Lower Cook Inlet. The purse seine fisheries in the Halibut Cove, Tutka Bay and Douglas River sub-districts, and the three set gillnet fisheries in Lower Cook Inlet were not sampled because they did not target specific local stocks. Chinook salmon samples also were not collected because total chinook salmon harvest is typically <1% of the total salmon catch. The coho and pink salmon catches normally are not sampled because they exhibit little inter-annual age composition variation.

This report summarizes the 1999 estimates of age and size composition of samples obtained from four discrete sockeye salmon fisheries and two sockeye salmon spawning populations (Figure 2). Monitoring changes in age composition allows fishery managers to prepare preseason forecasts of abundance and evaluate spawning escapement goals. This report also summarizes methods used to estimate total escapement from aerial and ground surveys.

METHODS

The Lower Cook Inlet salmon harvest has been managed as 16 independent purse seine fisheries, most of which target discrete stocks of sockeye, pink or chum salmon, each with their own escapement goal. Individual stocks occurred within distinct geographical sampling strata.

Most catch samples were obtained dockside when tenders were delivering catches from a single fishery. If tenders were expected to gather fish from several fisheries before returning to port, then samples were obtained aboard the tender before salmon from the targeted fishery were placed in the hold. The catch sampling crew interviewed the fishers delivering salmon to determine the origin of the catch before taking samples. If none of the above were possible then samples were obtained from a tender hold provided the skipper was interviewed to confirm that no salmon from an earlier sampling period were present.

There were several chum salmon runs which, due to expected low returns, were closed to commercial fishing this year. A small commercial catch (4,600 fish) occurred in the set gill net fishery in the Southern District; 2,060 and 1,200 chums respectively were caught incidentally in the seine fisheries in the Outer and Eastern Districts. Consequently, there were no chum AWL samples collected. Sockeye salmon age composition estimates were based on samples taken from three commercial fisheries (China Poot Bay, Desire and Kirschner Lakes) and from the escapement at Delight and Bear Lakes. Escapement samples were collected at Delight Lake for the third consecutive year while the Chenik Lake adult weir was discontinued due to low returns.

Salmon were measured from mid-eye to fork of tail (±1 mm) using a *Limnoterra*¹ electronic fish measuring board (FMBIV). An *Ohaus*¹ (Model CT6000-S) electronic balance was used to weigh salmon to the nearest gram. Sex was generally determined from external secondary sexual characteristics (e.g. kipe, humped back, etc.). If necessary, a small incision near the vent was made to inspect the gonads and confirm the sex.

Scales were collected from commercial catch and escapement sampled fish to determine age. When possible, scales were collected from the *preferred area* of each salmon: an area 2-3 rows above the lateral line, posterior to the dorsal fin and anterior to the anal fin. Scales were cleaned and mounted ridged side up on a gummed card and then heat-pressed onto acetate cards for reading and archival. Images of scale impressions were magnified 35x and projected onto a microfiche reader so the number of annuli per scale could be counted to determine age.

We used the European age designation system (Koo 1962). The first digit in this system refers to the number of freshwater annuli, the second digit refers to the number of marine annuli, and the total age is the sum of the two digits plus one. For example an age-1.2 salmon is a 4-year old salmon that spent 2 years in fresh water (first winter spent in the gravel as an alevin) and 2 years at sea.

¹Vendor or product names are provided to document methods and do not constitute endorsement by ADF&G.

Age composition sample sizes for scale collection were set for each sampling stratum to estimate age proportions p_i from a population of k age groups simultaneously within a specified distance d of their true population age proportion π_i , 90% of the time (1- α). That is,

$$Pr(\bigcap_{i=1}^{k} |p_{i} - \pi_{i}| \leq d) \geq 1 - \alpha,$$

where d and α were respectively chosen to be 0.05 and 0.10 for all scale samples; $\alpha_i = 2(1 - \Phi(z_i))$, $\Sigma \alpha_i < \alpha$, $\Phi(z_i) =$ area under the standard normal distribution: and $z_i = d \sqrt{n} / \sqrt{p_i(1-p_i)}$. Thompson (1987) calculated a maximum sample size of 403 for a worse-case scenario when three age groups were present in equal numbers, where d = 0.05 and $\alpha = 0.01$. Any deviation in the number of age groups or unequal contributions by age group would require a smaller sample size.

Sample sizes for mean weights ranged between 5 and 50 depending on σ . Most sample sizes were around 20 for a 200-salmon sample, or 1 in 10 salmon of each sex.

Estimates of standard errors by age group were derived according to procedures for stratified random sampling described by Snedecor and Cochran (1967):

$$SE = \sqrt{\sum_{h} C_h^2 \frac{S_h^2}{n_h}},$$

where C_h = the salmon catch in the hth stratum, and s_h^2 = the sample variance in the hth stratum. Catch totals were obtained from harvest receipts (commonly referred to as fish tickets) which must be used to document each landing by a licensed fisher.

All pink and chum and most sockeye salmon escapement estimates in Lower Cook Inlet were based on periodic counts made by an observer either flying in a fixed-wing aircraft or walking along selected streams (Tables 1, 2 and 3). Sockeye salmon escapement estimates for English Bay, Delight and Grouse Lakes were based on counts made at weirs.

Pink and chum salmon generally accumulated in surveyed streams over time, however, many often died before the last survey was completed. Therefore, survey counts were usually adjusted for steam life: the average length of time a spawning pink or chum salmon was alive and available to surveyors. Our method of considering stream life in estimating total pink and chum salmon escapements was similar to that described by Johnson and Barrett (1988). First, daily surveys were converted to fish-days:

$$fish - days = \frac{(x_i + x_{i-1})}{2} (d_i - d_{i-1}),$$
 3

where d_i = Julian calendar date of survey i (1<d < 365) and x_i = number of live pink or chum salmon observed in the study stream during survey I. Then, the area under the fish-day curve is found by intergration:

$$area = \sum_{i=1}^{n+1} \frac{(x_i + x_{i-1})}{2} (d_i - d_{i-1}), \qquad 4$$

where n = total number of surveys, $x_0 = x_{n+1} = 0$. Pink and chum salmon were not expected to enter streams before 1 July ($d_o = \text{Julian}$ date 191) or after 15 September ($d_n+1 = \text{Julian}$ date 258) unless otherwise noted.

Finally, dividing the area under the fish-days curve by stream life, in this case 17.5 d, yielded total escapement in numbers of salmon:

escapement =
$$\frac{\sum_{i=1}^{n+1} \frac{(x_i + x_{i-1})}{2} (d_i - d_{i-1})}{17.5}$$
.

If this estimate was less than the greatest number of salmon observed on any one survey, we used the peak survey count instead of the result from equation (5) as the total escapement estimate. If both aerial and ground surveys were available, we selected the survey we believed to be the most accurate estimate of total escapement. Sockeye salmon tended to accumulate in surveyed lakes and most were often still alive after the last spawning surveys were completed. Accordingly, peak counts were used as an escapement index for this species, unless otherwise noted.

RESULTS

In 1999, Lower Cook Inlet salmon harvests included 476,779 sockeye, 7,941 chum, and 1,140,488 pink salmon; total escapements were estimated to be 101,173 sockeye, 178,149 chum, and 409,439 pink salmon (Tables 4, 5, and 6 respectively).

Sockeye salmon catch or escapement age, weight, and length (AWL) samples were collected in four commercial fishing districts: Southern, Outer, Eastern and Kamishak (salmon do not return to streams in the Barren Islands District). Samples from sockeye salmon fisheries were obtained between 2 June and 25 July. We were able to obtain AWL samples from the commercial catch or escapement from each sockeye stock in Lower Cook Inlet that was commercially fished in 1999 with the exception of Neptune Bay. Three of the four catch samples met or exceeded the 90% confidence level where d = 0.05. Neither escapement sample (Delight and Bear Lake) met this criterion. A total of 2.738 readable scales were collected (Table 7).

Southern District Sockeye Salmon

The only Southern District fisheries assumed to be harvesting discrete sockeye salmon stocks occur in China Poot and Neptune bays. The runs originating from Leisure Lake, which drains into China Poot Bay, and Hazel Lake, which drains into Neptune Bay, supported the 2 largest sockeye fisheries in Lower Cook Inlet in 1999. Both of these runs were enhanced by ongoing lake stocking programs that began in 1976 and 1988 respectively. The 1999 common property commercial fisheries in China Poot and Neptune bays harvested 89,827 and 64,597 sockeye salmon respectively. Cost recovery efforts accounted for additional 16,139 and 49 sockeye salmon at China Poot and Neptune Bay respectively. Biological data on sockeye salmon returning to China Poot and Neptune bays have been collected since 1980 and 1993 respectively (Appendix A). The mean sockeye weight in our China Poot catch sample was 1.73 kg (n = 39) and the mean length was 486 mm (n = 413). The China Poot catch sample consisted of 84.0% age-1.2 sockeye salmon and 62.0% females (Table 8). The Neptune Bay fishery was not sampled in 1999. Since a barrier falls prevents upstream spawning migration into Leisure Lake, efforts were made to harvest all returning sockeye salmon in that terminal fishery.

The Halibut Cove sub-district purse seine and set gill net fishery exploits mixed stocks and harvested 42,920 sockeye salmon in 1999. Mixed stocks were also harvested in various set gillnet fisheries. The reported harvest of sockeye salmon near Barabara Creek was 4,162; 18,799 sockeyes were harvested in Kasitsna/Tutka bays, and 6,291 in Seldovia Bay. The Port Graham Subdistrict set gillnet fishery was kept closed in 1999, the first time since 1994, in order to protect sockeyes returning to English Bay Lakes. The only large spawning escapement of sockeye salmon in the Southern District occurred in the English Bay River drainage where 14,610 sockeye salmon passed through the weir and an additional 660 sockeyes were harvested for the cost recovery program (Paul McCollum, Port Graham Hatchery Manager, personal communication).

Outer District Sockeye Salmon

Wild runs in Nuka Bay supported a commercial harvest of 51,117 sockeye salmon in 1999. Biological data on sockeye salmon returning to Nuka Bay have been collected since 1984 (Appendix B). Escapement scale samples were obtained from 415 sockeye salmon in Delight Lake from 7 July to 31 July. Delight Lake had a escapement index of 17,000 sockeye salmon. The sample from this lake consisted of 49.0% age-1.2 and 43.0 % age-1.3 sockeye salmon with an overall mean length of 528 mm (n=453; Table 9). A sample of fish from the commercial catch at Desire Lake collected on 6 July was dominated by age-1.3 (73.8%), the overall average length was 568 mm; (n=539, table 10). Desire Lake had an escapement index of 14,570 sockeyes; 1,140 sockeye salmon were estimated to have escaped into Delusion (a.k.a. Ecstasy Lake).

Eastern District Sockeye Salmon

The escapement index to Aialik Lake was estimated to be 3,860 fish in 1999. Biological data on sockeye salmon returning to Aialik Lake have been collected since 1983 (Appendix C) however, there was no commercial fishery or AWL samples collected in 1999.

The enhanced run in Resurrection Bay supported a common property commercial harvest of 22,630 sockeyes and a hatchery cost recovery harvest of 59,074 fish; 6,119 sockeye salmon were counted through the weir into Bear Lake (Jeff Hetrick, CIAA, personal communication). The sample collected at the Bear Creek weir consisted of 51.7 % aged-1.2 sockeye salmon with an overall mean length of 519 mm and weight of 2.22 kg (n=702; Table 11).

Kamishak Bay District Sockeye Salmon

Two common property sockeye fisheries occurred in Kamishak Bay in 1999; 22,256 fish were harvested at Kirschner Lake and 7,153 from Mikfik Lake. An additional 17,504 sockeyes were harvested at Kirschner Lake for cost recovery purposes. A sample of the Kirschner Lake catch consisted of 68% age-1.2 fish. The overall mean length and weight of Kirschner sampled sockeyes was 486 mm (n=172) and 1.79 kg (n=18), respectively (Table 12). Age-1.2 fish comprised 49.0% of the Mikfik Lake sample (n= 458) with an overall mean length of 483 mm (n=458) and mean weight of 1.49 kg (n=169; Table 13). The escapement index at Mikfik Lake was estimated at 15,717 sockeyes. A migrational barrier at Kirschner Lake precludes escapement and all fish returning to this stocked lake are available for harvest.

The Chenik Lake Subdistrict remained closed due to the small run of 2,850 sockeye salmon. The Chenik Lake weir (in operation since1989) was not installed and the sockeye escapement was estimated by means of aerial survey. Chenik Lake's natural run was supplemented with hatchery-reared sockeye juveniles as early as 1978, however, the run has been extremely weak in recent years due to an IHN epizootic. Biological data on sockeye salmon returning to Chenik Lake have been collected since 1985 (Appendix D).

Escapement indices to other Kamishak District streams included 1,500 sockeyes in Ursus Cove Lagoon Creek, 1,020 in Bruin River, and 8,800 in Amakdedori Creek.

Lower Cook Inlet Chum Salmon

A combination of poor market conditions and reduced returns to most drainages continued to preclude many fishers from targeting chum salmon in 1999. The majority of the commercial chum salmon catch (4,624 for the Southern District; 2,062 for the Outer District) was incidental to other fisheries. Consequently no chum salmon AWL samples were collected. The LCI commercial chum salmon harvest of 7,941 fish (Table 5.) represented less than 9% of the 20-year average and marked the ninth successive below-average season in Lower Cook Inlet. The McNeil River chum escapement (estimated at 13,509 fish) failed to reach the low end of its escapement goal range of 20,000 to 40,000, for the eighth time since 1990.

Lower Cook inlet pink salmon

Virtually all pink salmon exhibit a two-year life cycle so catch samples typically are not collected to determine age composition of returning stocks. However, catch and escapement data are compiled to facilitate in-season management of the commercial fishery and to forecast the following years return (Otis 1997). The 1999 LCI pink salmon catch totaled 1,140,488 fish, slightly less than the 1,457,819 fish harvested in 1998 (Table 6). Nearly 97 % of the total harvest occurred in the Southern District largely as a result of Tutka Hatchery production (Table 6). Over 91% of the Southern District catch went to Tutka Hatchery cost recovery and brood stock collection; the common property harvest totaled 222,228 fish. Only 4 of 24 pink salmon streams that were monitored for escapement achieved their desired escapement levels; 1 of 6 index streams in the Southern District attained the minimum escapement goal.

Discussion

Sockeye salmon mean lengths and weights within a brood year are expected to increase with increasing ocean age. For example, age-1.1, 1.2, and 1.3 Aialik Lake male sockeye salmon from the 1980 brood year had mean lengths progressing from 355 mm to 515 mm to 569 mm (Appendix C). Whenever this trend was not observed, data were examined for keypunch errors, and scales were reexamined for aging errors. Some apparent size trend discrepancies resulted from sampling inadequacies. For instance, the mean weight of age-1.2 sockeye salmon from Desire Lake was 2.23 kg, while age-2.2 sockeyes weighed only 1.99 kg (Table 10). This apparent discrepancy was probably not due to aging or keypunch errors. It was more likely related to the age-2.2 sample consisting of just three fish, which did not provide a representative sample for its age group.

Occasional anomalies occurred in the freshwater residency period for some stocks. For example, age-1. fish has dominated Aialik Bay returns since catch sampling began there in 1983. However, 52.9% and 65.5% of juvenile sockeye remained in Aialik Lake a second year and smolted as age-2. fish in 1990 and 1991, respectively. East Nuka Bay returns experienced similar occurrences in 1988 and 1994. For only the fourth time since 1975, age-1.2 fish outnumbered age-1.3 fish returning to Mikfik Creek in 1999. Inter-annual variation in age compositions is relatively common within sockeye salmon stocks (Burgner 1991); however, casual mechanisms are not fully understood. While size may not be the sole determinant for smoltification, Weatherly and Gill (1995), report that growth is an important component influencing the duration of freshwater residence of sockeye salmon. Burgner (1991) lists several factors which may influence the freshwater growth of sockeye salmon, including: abundance and availability of food, temperature conditions, length of growing season, intensity of available light, competition, disease, feeding behavior in relation to predators, and movements to favorable habitats for feeding and survival.

While the overall sex ratio of returning adult salmon is typically even, males generally dominate the early portion of a run and females the latter, particularly for chum and pink salmon. Thus, the date samples are collected relative to the timing of the spawning run can influence the observed sex ratio of the sample. Because temporal biases occur and size-at-age differences exist between male and female sockeye salmon (Burgner 1991), sampling dates are reported and age-weight-length data are stratified by sex in the appendices.

Escapement indices reported herein are primarily based on area-under-the-curve estimates that incorporate a 17.5 day streamlife. This streamlife estimate has been used for Lower Cook Inlet pink salmon for almost 30 years (Davis and Valentine 1970). While streamlife is recognized as a dynamic parameter, often varying by sex, segment of the run, and year, recent pink salmon streamlife work conducted in Prince William Sound suggests 17.5 days may be outside the commonly observed range of values (Bue et al. 1998). Until streamlife studies are conducted to confirm these data for Lower Cook Inlet streams, we are reluctant to modify our escapement indices. Nonetheless, readers should be aware that the historical escapement indices presented in this document could change in the future when a more appropriate streamlife estimated is adopted for Lower Cook Inlet pink and chum salmon.

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Table 1. Survey methods and total escapement algorithms used for sockeye salmon streams in Lower Cook Inlet, 1999.

Stream	Survey Method	Total Escapement Algorithm			
Southern District					
English Bay	Weir	Sum of daily weir counts			
		Outer District			
Desire Lake	Aerial	Peak live count			
Delight Lake	Weir	Sum of daily weir counts			
Delusion Lake	Aerial	Peak live count			
		Eastern District			
Aialik Lake	Aerial	Peak live count			
Salmon Creek	Ground	Peak live count			
Grouse Creek	Weir	Sum of daily weir counts			
Bear Creek	Weir	Sum of daily weir counts			
		Kamishak District			
Ursus Lagoon	Aerial	Peak live count			
Bruin Lake Creek	Aerial	Peak live count			
Bruin Bay	Aerial	Peak live count			
Amakdedori Creek	Aerial	Peak live count			
Chenik Lake	Aerial	Peak live count			
Paint River	Aerial	Peak live count			
Mikfik Lake	Aerial	Peak live count			
Little Kamishak River	Aerial	Peak live count			
Douglas Reef	Aerial	Peak live count			

Table 2. Survey methods and total escapement algorithms used for chum salmon streams in Lower Cook Inlet, 1999.

Stream	Survey Method	Total Escapement Algorithm	Start/stop dates Area-under-the-curve
		Southern District	
Humpy Creek	Ground	17.5 day streamlife	7/1-9/15
Seldovia River	Ground	17.5 day streamlife	7/1-9/20
Port Graham Left	Ground	17.5 day streamlife	7/1-9/20
Port Graham River	Ground	17.5 day streamlife	7/1-9/20
		Outer District	
Dogfish Bay	Ground	17.5 day streamlife	7/1-9/15
Port Chatham	Ground	17.5 day streamlife	7/1-9/30
Windy River Left	Ground	17.5 day streamlife	· 7/1-9/30
Windy River Right	Ground	17.5 day streamlife	7/1-9/30
Rocky River	Aerial	17.5 day streamlife	7/1-9/15
Port Dick:		•	
Head End Creek	Ground	17.5 day streamlife	7/1-9/20
Slide Creek	Ground	17.5 day streamlife	7/1-9/30
Middle Creek	Aerial	17.5 day streamlife	7/1-9/20
Island Creek	Ground	17.5 day streamlife	7/1-9/30
Petrof River	Aerial	17.5 day streamlife	7/1-9/15
Nuka Island, South Cr.	Ground	17.5 day streamlife	7/1-9/15
James Lagoon	Aerial	17.5 day streamlife	7/1-9/15
		Eastern District	
Tonsina Creek	Ground	17.5 day streamlife	7/1-9/30
Tonsina Left Creek	Ground	17.5 day streamlife	7/1-9/30
Salmon Creek	Ground	Peak carcass count	
Clear Creek	Ground	17.5 day streamlife	7/1-9/15
Sawmill Creek	Ground	17.5 day streamlife	7/1-9/30
Spring Creek	Ground	17.5 day streamlife	7/1-9/30
]	Kamishak Bay District	
Ininskin River	Aerial	17.5 day streamlife	7/25-9/30
Sugarloaf Creek	Aerial	17.5 day streamlife	7/25-9/30
North Head Creek	Aerial	17.5 day streamlife	7/25-9/30
Cottonwood Creek	Aerial	17.5 day streamlife	7/25-9/30
Browns Peak Creek	Aerial	17.5 day streamlife	7/1-9/15
Ursus Lagoon, Rt. hand	Aerial	17.5 day streamlife	7/15-9/30

Table 2. Cont'd page 2 of 2

Stream Survey T Method		Total Escapement Algorithm	Start/stop Dates Area-Under- Curve
	Kam	ishak Bay District	
Ursus Lagoon Creek	Aerial	17.5 day streamlife	7/15-9/30
Sunday Creek	Aerial	17.5 day streamlife	7/1-9/15
Bruin Bay River	Aerial	17.5 day streamlife	7/1-9/15
McNeil River ^a	Aerial	17.5 day streamlife	6/20-9/15
Little Kamishak River	Aerial	17.5 day streamlife	7/1-9/15
Strike Creek	Aerial	17.5 day streamlife	7/1-9/15
Big Kamishak River	Aerial	17.5 day streamlife	7/1-9/15
Douglas Reef	Aerial	17.5 day streamlife	7/1-9/15
Douglas Beach	Aerial	17.5 day streamlife	7/1-9/15

^a McNeil River chum salmon aerial survey counts are only considered to be an index of abundance. In some years, the estimated number of salmon consumed by bears in McNeil River Wildlife Sanctuary has exceeded the peak aerial survey count.

Table 3. Survey methods and total escapement algorthims used for pink salmon streams in Lower Cook Inlet, 1999.

Stream	Survey Method	Total Escapement Algorithm	Start/stop Dates Area-Under-Curve
	Sout	hern District	
Humpy Creek	Ground	17.5 day streamlife	7/15-9/30
China Poot Creek	Ground	17.5 day streamlife	8/1-9/25
Tutka Creek	Ground	17.5 day streamlife	7/1-/9/30
Seldovia River	Ground	17.5 day streamlife	7/15-9/20
Barabara Creek	Ground	17.5 day streamlife	8/1-9/30
Port Graham left	Ground	17.5 day streamlife	8/1-9/30
Port Graham River	Ground	17.5 day streamlife	8/1-9/30
	Ou	ter District	
Dogfish Bay	Ground	17.5 day streamlife	8/1-9/30
Port Chatham	Ground	Peak live & carcass count	
Chugach Bay	Aerial	17.5 day streamlife	7/15-9/30
Windy River Left	Ground	17.5 day streamlife	7/10-9/30
Windy River Right	Ground	•	7/10-9/30
Scurvy Creek	Ground	17.5 day streamlife	7/15-9/30
Rocky River	Ground	17.5 day streamlife	7/15-9/30
Port Dick:		•	
Head End Creek	Ground	17.5 day streamlife	7/1-9/30
Slide Creek	Ground	17.5 day streamlife	7/15-9/30
Middle Creek	Aerial	17.5 day streamlife	7/15-9/30
Island Creek	Ground	17.5 day streamlife	7/15-9/30
Nuka Island, South Creek	Ground	17.5 day streamlife	7/15-9/30
Berger Bay	Ground	17.5 day streamlife	7/15-9/30
James Lagoon	Ground	17.5 day streamlife	7/15-9/15
	Eas	tern District	
Humpy Cove	Ground	Peak live & carcass count	
Tonsina Creek	Ground	17.5 day streamlife	8/1-9/30
Tonsina Left Creek	Ground	17.5 day streamlife	8/1-9/30
Salmon Creek	Ground	17.5 day streamlife	8/1-9/30
Grouse Creek	Ground	Peak live & carcass count	
Lost Creek	Ground	Peak live & carcass count	
Sawmill Creek	Ground	17.5 day streamlife	8/1-9/30
Spring Creek	Ground	17.5 day streamlife	8/1-9/30
Thumb Cove	Ground	17.5 day streamlife	8/1-9/30

Table 3 cont'd (page 2 of 2)

Stream	Survey	Total Escapement Algorithm	Start/stop Dates Area-Under-Curve	
	Kamisha	k Bay District		
Sugarloaf Creek	Aerial	17.5 day streamlife	7/15-9/15	
North Head Creek	Aerial	17.5 day streamlife	7/15-9/30	
Browns Peak Creek	Aerial	17.5 day streamlife	7/15-9/15	
Ursus Lagoon Right-hand	Aerial	17.5 day streamlife	7/15-9/15	
Ursus Lagoon	Aerial	17.5 day streamlife	7/15-9/15	
Sunday Creek	Aerial	17.5 day streamlife	7/15-9/15	
Bruin Bay Creek	Aerial	17.5 day streamlife	7/1-9/15	
Amakdedori Creek	Aerial	17.5 day streamlife	7/1-9/15	

Table 4. Commercial sockeye salmon catches (including hatchery cost recovery) and escapements in numbers of fish by subdistrict, Lower Cook Inlet, 1999 (from Hammarstrom 2000).

Subdistrict/System	Catch	Escapement a	Total Run
SOUTHERN DISTRICT			
Humpy Creek		10	10
Halibut Cove	42,920		42,920
China Poot Bay	,		•
Common Property Fishery	89,827		
Hatchery Cost Recovery	16,139		
China Poot Creek		522 ^b	
Total Run			106,488
Neptune Bay			
Common Property Fishery	64,597		
Hatchery Cost Recovery	49		
Hazel Lake Creek		100	
"Oxbow" Creek		15	
Total Run			64,761
Tutka/Kasitsna Bays & Tutka Creek	18,799°	98	18,897
Barabara Creek	4,162		4,162
Seldovia Bay	6,291	5	6,296
Port Graham	- , -	1	1
English Bay			
Hatchery Cost Recovery	660		
English Bay Lakes		14,610 ^d	
Hatchery Broodstock		1,234	
Total Run		1,227	16,504
SOUTHERN DISTRICT TOTAL	243,444	16,595	260,039
OUTER DISTRICT			
Rocky River		. 2	2
Port Dick			
Head End		4	
Island Creek		2	
Total Run	•		6
East Arm Nuka Bay (McCarty Fiord)	51,117		
Delight Lake		17,000 ^e	
Desire Lake		14,570	
Delusion Lake		1,140	
Total Run			83,827
OUTER DISTRICT TOTAL	51,117	32,718	83,835
EASTERN DISTRICT			
Aialik Bay & Aialik Lake	52	3,860	3,912

-continued-

Table 4. (page 2 of 2)

Subdistrict/System	Catch	Escapement ^a	Total Run
EASTERN DISTRICT(cont'd)			
Resurrection Bay North			
Common Property Fishery	22,630		
Hatchery Cost Recovery	59,074		
Hatchery Discards/Donations	53,549		
Bear Lake Escapement		6,119 _f ^d	
Hatchery Brood Stock			
Bear/Salmon Creeks		1,470 6,909	
Total Run			149,751
EASTERN DISTRICT TOTAL	135,305	18,358	153,663
KAMISHAK BAY DISTRICT			
Cottonwood Creek		10	10
Ursus Cove Lagoon Creek		1,500	1,500
Kirschner Lake		· · · · · · · · · · · · · · · · · · ·	•
Common Property Fishery	22,256		
Hatchery Cost Recovery	17,504		
Total Run			39,760
Bruin Bay			
Bruin Lake Creek		10 ^b	
Bruin Bay River		1,020	
Total Run			1,030
Chenik Lake			
Amakdedori Creek		8,800	
Chenik Creek/Lake		2,850	
Total Run		_	11,650
Paint River		900 ^g	900
McNeil Cove (Mikfik Creek/Lake)	7,153	15,717	22,870
Kamishak Bay			•
Big Kamishak River		500	
Little Kamishak River		1,730	
Strike Creek		100	
Total Run			2,330
Douglas River/Silver Beach			•
Douglas Clearwater Tributary		280	
Douglas Reef Main Left		85	
Total Run			<u>· 365</u>
KAMISHAK BAY DISTRICT	46,913	33,502	80,415
TOTAL LOWER COOK INLET	476,779	101,173	577,952

Escapement estimates derived from limited aerial surveys. Numbers represent unexpanded aerial live counts.

No freshwater escapement, prevented by barrier falls.

Commercial catch includes 88 sockeyes harvested incidentally during pink salmon hatchery cost recovery.

Weir counts.

Weir counts and video images.
 Brood stock total at Bear Lake includes 286 mortalities.

^g No freshwater escapement, ladder not opened during 1999.

Table 5. Commercial chum salmon catches and escapements in numbers of fish by subdistrict, Lower Cook Inlet, 1999 (from Hammarstrom 2000).

Subdistrict/System	Catch	Escapement a	Total Run
SOUTHERN DISTRICT			
Humpy Creek		607	607
Halibut Cove	92	007	92
China Poot Bay	88		88
Neptune Bay	65		65
Tutka Bay	1,485	4	1,489
Barabara Creek	1,386		1,386
Seldovia Bay & River	1,508	4,021	5,529
Port Graham & River		6,595	6,595
SOUTHERN DISTRICT TOTAL	4,624	11,227	15,851
OUTER DISTRICT			
Dogfish Bay		18,799	18,799
Port Chatham		1,100	1,100
Windy Bay			
Windy Right Creek		362	
Windy Left Creek		716	
Total Run			1,078
Rocky Bay & River		5,383	5,383
Port Dick			
Port Dick (head end) Creek		2,874	
High Tech Creek		10	
Slide Creek		1,958	
Middle Creek		215	
Island Creek		16,398	
Total Run			21,455
Nuka Island/Petrof River		1,000	1,000
East Arm Nuka Bay/James Lagoon	<u>2,062</u>	<u>217</u>	2,279
OUTER DISTRICT TOTAL	2,062	49,032	51,094
EASTERN DISTRICT			
Aialik Bay	1,232		1,232
Resurrection Bay North		•	
Sawmill Creek		244	
Spring Creek		• 333	
Thumb Cove		74	
Tonsina Creek		2,465	
Total Run			3,116
EASTERN DISTRICT TOTAL	1,232	3,116	4,348

-continued-

Table 5. (page 2 of 2)

Subdistrict/System	Catch	Escapement	Total Run
KAMISHAK BAY DISTRICT			
Inisksin Bay			
Iniskin River		23,257	
Sugarloaf Creek		1,383	
North Head Creek		903	
Total Run			25,543
Cottonwood Bay & Creek		11,993	11,993
Ursus Cove		·	ĺ
Brown's Peak Creek		1,250	
Ursus Lagoon Right Creek		9,264	
Ursus Cove Lagoon Creek		11,764	
Total Run		·	22,278
Rocky Cove/Sunday Creek		3,700	3,700
Kirschner Lake	23	•	23
Bruin Bay & River		10,302	10,302
McNeil River		13,509	13,509
Kamishak/Douglas Reef			,
Big Kamishak River		11,578	
Little Kamishak River		8,897	
Strike Creek		1,506	
Douglas Reef Creek		782	
Douglas Reef Main Left Cr.		1,107	
Total Run		-	23,870
Douglas River/Douglas Beach Creek		<u>3,579</u>	3,579
KAMISHAK BAY DISTRICT	23	114,774	114,797
TOTAL		•	
TOTAL LOWER COOK INLET	7,941	178,149	186,090

^a Escapement estimates are derived from periodic ground or aerial surveys with stream life factors applied.

Table 6. Commercial pink salmon catches (including hatchery cost recovery) and escapements in numbers of fish by subdistrict, Lower Cook Inlet, 1999 (from Hammarstrom 2000).

Subdistrict/System	Catch	Escapement ^a	Total Run
SOUTHERN DISTRICT			
Humpy Creek		12,827	12,827
Halibut Cove	3,373	12,02,	3,373
China Poot Bay/Creek	b	685	6,958
•	6,273 13,345	005	13,345
Neptune Bay Tutka/Kasitsna Bays	13,343		15,545
Common Property Fishery	222,228		
Hatchery Cost Recovery	857,902		
Hatchery Brood Stock	00,300	151,903	
Tutka Lagoon Creek		27,947	
Total Run		,	1,259,980
Barabara Creek	683	3,922	4,605
Seldovia Bay & River	1,463	12,159	13,622
Port Graham			
Hatchery Brood Stock		. 0	
Port Graham River		9,651	
Total Run			9,651
English Bay		18,796°	18,796
SOUTHERN DISTRICT TOTAL	1,105,267	237,890	1,343,157
OUTER DISTRICT			
Dogfish Bay		12,376	12,376
Port Chatham		10,697	10,697
Chugach Bay		6,429	6,429
Windy Bay			
Windy Right Creek		5,159	5,159
Windy Left Creek		24,020	24,020
Total Run			
Rocky Bay		000	000
Scurvy Creek		900	900
Rocky River		17,164	17,164
Total Run			
Port Dick		8,328	
. Port Dick (head end) Creek High Tech Creek		127	
		84	
Well Flagged Creek Slide Creek		711	
Middle Creek		1,259	
Island Creek		8,566	
Total Run		0,500	19,075
Taylor Bay		4,469	4,469
y y		-7	.,

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Table 6. (page 2 of 3)

		Escapement	
OUTER DISTRICT (cont'd)			
Port Dick (Outer)			
Sunday Harbor		2 102	
Takoma Cove		2,103	
		526	
Total Run			2,629
Tonsina Bay		2,234	2,234
Petrof River		500	500
Nuka Island			
South Nuka Island Creek		2,400	
Mike's Bay		3,463	
Home Cove		1,577	
Herring Pete Bay		1,051	
Total Run		,	8,49 1
East Arm Nuka Bay (McCarty Fiord)	32,484		0,1,71
Delight Lake	,	461	
Desire Lake		6,832	
Delusion Lake		571	•
Total Run		3/1	40.240
OUTER DISTRICT TOTAL	32,484	122 007	40,348
COLEMBISTACT TOTAL	32,404	122,007	154,491
EASTERN DISTRICT			
Aialik Bay	1.020	016	
Resurrection Bay North	1,930	915	2,845
Bear/Salmon Creeks			
Sawmill Creek		7,769	
		156	
Spring Creek		391	
Tonsina Creek		492	
Humpy Cove		3,960	
Thumb Cove/Likes Creek		9,180 ^d	
Total Run		,,	21,948
EASTERN DISTRICT TOTAL	1,930	22,863	24,793
KAMISHAK BAY DISTRICT			
Inisksin Bay			
North Head Creek		(02	
Sugarloaf Creek		603	
<u> </u>		200	
Total Run			803
Cottonwood Bay/Creek		200	200
Ursus Cove			
Brown's Peak Creek		2,630	
Ursus Lagoon Righthand Cr.		100	
Ursus Lagoon Creek		2,700	
Total Run		<i>y</i> = =	5,430

Table 6. (page 3 of 3)

Subdistrict/System	Catch	Escapement ^a	Total Run
KAMISHAK BAY DISTRICT (cont'd)			
Rocky Cove/Sunday Creek		5,310	5,310
Kirschner Lake	807 ^e		807
Bruin Bay			
Bruin Bay River		2,882	
Bruin Lake Creek		25	
			2,907
Kamishak Reef			
Big Kamishak River		5,657	
Little Kamishak River		4,229	
Strike Creek		629	
Total Run		•	10,515
Douglas Reef/Silver Beach		501	
Douglas Reef		• 531	
Douglas Reef Main Left		452 531	
Douglas Reef		531	1 514
KAMISHAK BAY DISTRICT TOTAL	807	26,679	<u>1,514</u> 27,486
TOTAL LOWER COOK INLET	1,140,488	409,439	1,549,927

^a Escapement estimates are derived from periodic ground or aerial surveys with stream life factors applied.

b China Poot catches include 14 pinks caught during hatchery sockeye salmon cost recovery harvests.

^d Escapement figure for Likes Creek (Thumb Cove) includes 70 pinks removed under special permit for brood stock purposes by the Alaska Sea Life Center.

^e Kirschner Lake pinks include 325 taken during common property fishing and 482 taken during hatchery sockeye cost recovery harvests.

^c English Bay River pink escapement total includes 1,270 fish taken under special permit issued to Port Graham Hatchery Corporation for brood stock purposes.

Table 7. Number of readable scales and corresponding confidence levels, for age composition estimates of Lower Cook Inlet sockeye and chum salmon samples, 1999.

		Sample		Confidence interval (d=0.05) ^a
Fishery	Dates	Size	Туре	,
	Sockey	e Salmon		
Bear Lake	2 June- 18 July	703	Scale	0.985
China Poot	17 July-28 July	413	Scale	0.993
Delight Lake	15 July-31 July	453	Scale	0.935
Desire Lake	6 July	539	Scale	0.985
Mikfik Lake	17 June-24June	458	Scale	0.940
Kirschner Lake	25 July	172	Scale	0.703
	Total	2,738	-	

a Simultaneous confidence interval for multiple age classes (Thompson 1987)

Table 8. Age, sex, and size composition of sockeye salmon commercial catch from China Poot Bay, 1999.

	Age Composition by Brood Year				
	1.2	1.3	2.2	total	
Sample Period:	17 July - 28	July		· · · · · · · · · · · · · · · · · · ·	
Males Percent Sample Size Mean Length Std. Error Sample Size	32 32.00 129 479 1 129	4 4.00 17 530 7 17	2 2.00 9 488 12 9	38 38.00 155 485 1	
Mean Weight Std. Error Sample Size	1.80 0.04 17	1.95 0.25 2	1.55	1.80 0.04 20	
Females Percent Sample Size Mean Length Std. Error Sample Size	52 52.00 219 480 1 219	7 7.00 27 530 3 27	3 3.00 12 500 7 12	62 62.00 258 486 1 258	
Mean Weight Std. Error Sample Size	1.67 0.06 18		2.00	1.69 0.06 19	
Both Sexes Percent Sample Size Mean Length Std. Error Sample Size	84 84.00 348 479 0 348	11 11.00 44 530 3 44	5 5.00 21 496 6 21	100 100.00 413 486 0 413	
Mean Weight Std. Error Sample Size	1.72 0.04 35	1.95 0.25 2	1.82	1.73 0.04 39	

Table 9. Age, sex, and size composition of sockeye salmon escapement from Delight Lake, 1999.

	Age Composition by Brood Year						
***************************************	1.2	1.3	2.2	2.3	total		
Sample Period:	15 July-31	July					
Males	24	28	3	1	56		
Percent	24.00	28.00	3.00	1.00	56.00		
Sample Size	108	124	15	4	251		
Mean Length	50 6	567	528	578	539		
Std. Error	1	2	4	6	1		
Sample Size	108	124	15	4	251		
Females	25	15	3	. 1	44		
Percent	25.00	15.00	3.00	1.00	44.00		
Sample Size	115	69	13	5	202		
Mean Length	493	552	493	554	515		
Std. Error	1	2	8	9	1		
Sample Size	115	69	13	5	202		
Both Sexes	49	43	6	2	100		
Percent	49.00	43.00	6.00	2.00	100.00		
Sample Size	223	193	28	2.00	453		
Mean Length	499	562	511	566	528		
Std. Error	1	1	4	5	528 1		
Sample Size	223	193	28	9	453		

Table 10. Age, sex, and size composition of sockeye salmon commercial catch from Desire Lake, 1999.

	Age Composition by Brood Year					
	1.2	1.3	2.2	2.3	total	
Sample Period:	6 July					
Males						
Percent	8.90	35.90	0.60	0.40	45.80	
Sample Size	48	194	3	2	247	
Mean Length	528	593	555	614	580	
Std. Error	3	1	2	42	1	
Sample Size	48	194	3	2	247	
Mean Weight	2.32	3.50	2.21		3.25	
Std. Error	0.17	0.15			0.12	
Sample Size	4	14	1		19	
Females.						
Percent	15.00	37.90	0.90	0.40	54.20	
Sample Size	81	204	5	2	292	
Mean Length	524	573	516	572	558	
Std. Error	2	1	6	3	1	
Sample Size	81	204	5	2	292	
Mean Weight	2.18	2.66	1.85		2.51	
Std. Error	0.11	0.08	0.15		0.07	
Sample Size	9	23	2		34	
Both Sexes						
Percent	23.90	73.80	1.50	0.80	100.00	
Sample Size	129	398	8	4	539	
Mean Length	525	583	531	593	568	
Std. Error	2	1	. 3	21	0	
Sample Size	129	398	8	4	539	
Mean Weight	2.23	3.07	1.99		2.85	
Std. Error	0.09	0.08	0.15		0.07	
Sample Size	13	37	. 3		53	

Table 11. Age, sex, and size composition of sockeye salmon escapement from Bear Lake, 1999.

	Age Composition by Brood Year					
###-dam	1.2	1.3	2.2	2.3	total	
Sample Period:	2 June - 18 J	uly				
Males						
Percent	22.20	18.30	2.40	0.30	43.20	
Sample Size	156	129	17	2	304	
Mean Length	503	565	528	605	532	
Std. Error	2	2	8	12	1	
Sample Size	156	129	17	2	304	
Mean Weight	2.16	2.74	2.14	3.25	2.41	
Std. Error	0.07	0.04	0.08	0.35	0.04	
Sample Size	156	129	17	2	304	
Females						
Percent	29.50	20.80	6.40	0.10	56.80	
Sample Size	207	146	45	1	399	
Mean Length	490	537	511	536	510	
Std. Error	1	2	4		1	
Sample Size	207	146	45	1	399	
Mean Weight	1.92	2.31	1.96	1.90	2.07	
Std. Error	0.08	0.05	0.06		0.05	
Sample Size	207	145	45	1	398	
Both Sexes						
Percent	51.70	39.10	8.80	0.40	100.00	
Sample Size	363	275	62	3 ·	703	
Mean Length	496	550	516	588	519	
Std. Error	1	. 1	. 3	12	1	
Sample Size	363	275	62	3	703	
Mean Weight	2.02	2.51	2.01	2.91	2.22	
Std. Error	0.05	0.03	0.05	0.35	0.03	
Sample Size	363	274	62	3	702	

Table 12. Age, sex, and size composition of sockeye salmon commercial catch from Kirschner, 1999.

	Age Composition by Brood Year					
	1.2	1.3	2.2	2.3	total	
Sample Period:	25 July					
Males Percent Sample Size Mean Length Std. Error Sample Size	36 36.00 61 474 1 61	9 9.00 16 525 6 16	5 5.00 9 494 7 9	1 1.00 2 521 1 2	51 51.00 88 486 1 88	
Mean Weight Std. Error Sample Size	1.82 0.04 6	2.07 0.30 2	1.67		1.85 0.06 9	
Females Percent Sample Size Mean Length Std. Error Sample Size	32 32.00 54 471 2 54	11 11.00 19 525 4 19	6 6.00 11 499 6 11		49 49.00 84 487 2 84	
Mean Weight Std. Error Sample Size	1.52 0.08 6	2.32 0.10 3			1.72 0.06 9	
Both Sexes Percent Sample Size Mean Length Std. Error Sample Size	68 68.00 115 473 1	20 20.00 35 525 4 35	11 11.00 20 496 4	1 1.00 2 521 1 2	100 100.00 172 486 1	
Mean Weight Std. Error Sample Size	1.68 0.04 12	2.21 0.14 5	1.67		1.79 0.04 18	

Table 13. Age, sex, and size composition of sockeye salmon commercial catch from Mikfik Lake, 1999.

		Age Composi	ition by Brood	Year	
	1.2	1.3	2.2	2.3	total
Sample Period:	17 June - 2	4 June			
Males	19	17	4		40
Percent	19.00	17.00	4.00		40.00
Sample Size	85	80	20		185
Mean Length	459	525	487		490
Std. Error	2	2	3		1
Sample Size	85	80	20		185
Mean Weight	1.29	1.85	1.64		1.56
Std. Error	0.04	0.05	0.01		0.03
Sample Size	28	26	4		58
Females	30	18	11	1	60
Percent	30.00	18.00	11.00	1.00	60.00
Sample Size	138	82	50	3	273
Mean Length	457	512	477	495	478
Std. Error	1	3	3	20	1
Sample Size	138	82	50	3	273
Mean Weight	1.27	1.72	1.42	1.63	1.44
Std. Error-	0.04	0.05	0.05	0.18	0.02
Sample Size	53	38	18	2	111
Both Sexes	49	35	15	1	100
Percent	49.00	35.00	15.00	1.00	100.00
Sample Size	223	162	70	3	458
Mean Length	458	518	480	4 9 5	483
Std. Error	1	2	2	20	1
Sample Size	223	162	70	3	458
Mean Weight	1.28	1.78	1.48	1.63	1.49
Std. Error	0.03	0.03	0.04	0.18	0.02
Sample Size	81	64	22	2	169

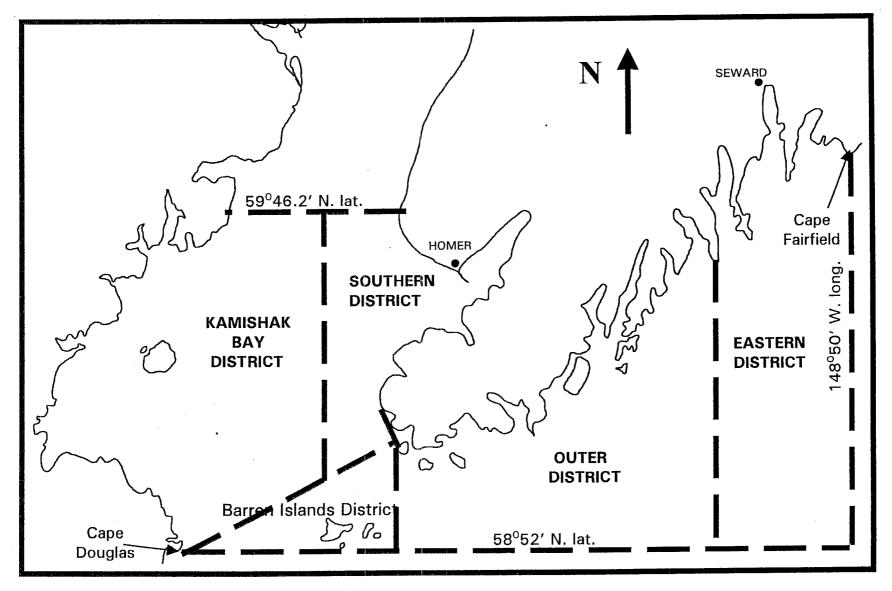


Figure 1. Lower Cook Inlet salmon management districts (not drawn to scale)

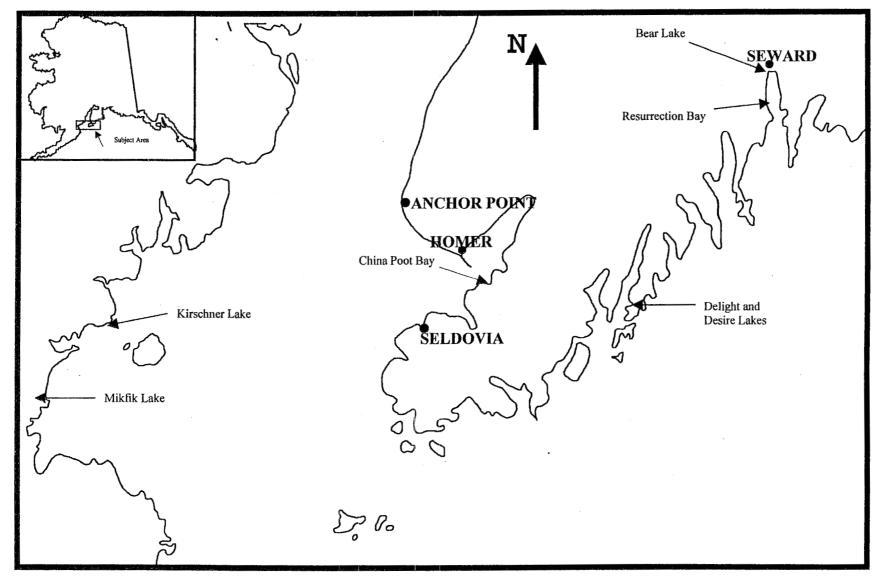


Figure 2. Location of 6 Lower Cook Inlet salmon catch and escapement areas sampled in 1999.

APPENDICES

Appendix A. China Poot: age, and mean length and weight (± Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates no data were collected during that brood/harvest year; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

Brood	l													A	ge Gro	up														
Year	1.1	SE	n	1.2	SE	n	1.3	SE	n	1.4	SE			SE			SE		2.3	SE	n	2.4	SE	n	3.1	SE	n	3.2	SE	n
1077				400	12.22	25						N	Male m	ean len	igth (m		brood y	ear	500	25.00	2									
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1984				498	2.00	204		5.00				1	379	12,00	20		2.00										*/////	437	22.00	- 2
1985		4.00	20	489	1.00	439	554	5.00	27	COMMONDATION	#8 ************************************		407	NA	1	479	4.00	43	554	15.00	4		indensit Mewasia	161 1 4 m 24 2 f	mary money a take	May Latinates		er Director of	98.85 0.00	vanero a vesta
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1989	ayersite	SHIENE CA	KARASTA	1.54	0.05	. 10	1 66	0.16	7	(987) (98)	Maria (Maria	1000	r G. Hiller	3.97 GL34	Sistema.	1.25	0 1 1	2		366 Pel	18/8ED2		06455		10.254.51	KASSEA		a spanie		őrikgisési	41.14
1990					0.07	11		0.21								1.33	0.11			Value (y. He		342.5		40.55			-375d -375d
1991	u microstrace)			1.65			e. o marantini sef	menta 25475	e e rese et 1965	read (SYSY)		umerkietik.	0.77		1	50 - 100 Lett. 120 1889	ergery 13/1820	n mersumet.	una di dalahai	ugens risk er ver ^{ege}	-, :::::/ #27	value Villa 191		7 . r - 6 . s . 3 . 3	es mes enc. D	ar data'		. details 185	2 - 14 - 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	and a super su	
1992			1846		THE W		2.41	0.14	. 4	833						2.14															33
1993	100	**************************************	eles a com	1.85			rijakoransi	Shumari	CANTER PROFESSION	455.023.079	igisa sununut.	Market eta	1.92	NA	1	1.69		3	wayswere its	525909-19	ansii id	Swell Stage of	7590493.T	NG North	21 <u>955900</u> 08	g0455,750.01	2134 0460	gwagenak.	rasarras oru	tik (karatisa Li	1-9
1994 1995	1.02	- NA	1	1.72	0.03				1627 N							2.00	NA	1		95777	349	3957			MINE	3494k	was selfa	270 W	ga filik		Ja f
1996				1.07	0.00	10																									
1997																															

Appendix A cont'd (China Poot: page 3 of 4).

						Age (Group						
Brood Year	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3
			-			st (number	of fish) by	brood year					
1975	www.garegory.ga.pasas	ereteror est promo no son	er en værskindenskrivetin	ons north the transmission	152	www.comences	OBSTRUKTURAN KAN KENAN	PLEACH TONOMERS	25794-378 836-3777 25794-378 836-3777	energen som energe	www.errene	Teras a Environmento	AUSAOMR LALIEM
1976				5,620	. 136			E ENMANDE E					
1977	Kirka arak salah dina		00000000000000000000000000000000000000	3,394		assaurista.	272	 The Grunden	266	Named Process	\$28254B25432	70039007482500X	40 888 S 1818 S
1978				22.045	133	100		266	216				
1979	\$21.00 AB317 (200.00)		 MARINE AR PERSON	32,845	1,941	190		1,509	CO SERVICE STORY			PTE-SAN DESERVATUR	
1980 .			655	55,632	6,444 4,781			8,528					
1981	SERVI ENTRE			15,161 6,694	4,761		20000648792599		1,406	ervertere F	 5662222655		na Lawa
1982 1983		Model St		0,094	1,326		LIAT BOUGH	17,249	307		DRING.		· MONTE
1984				12,862	1,324	4272027045CE	 1,174	2,592	68	7.4945712h5745		384	THE WASTE
1985		7929651490	1,126	16,595	1,823	86.P.82248	35	2,904	322				Talker Early
1986			1,120	7,429	2,141	STEEN NAME	203	16,172	386	PERMISE SEE	SWATERIES		
1987		(S3441-4159 b) # 0	540	25,628	1,157	7462583330	452	15,044	2000			VELEZIMAK-MI	With the co
1988		DANIBET GE		16,073	2,295		643	2,868	88	ece esti			
1989	\$\$2365960,9469BA6	Resource to	1,543	19,789	2,821	#865 DVA	287	970					FWP FIGURE
1990			287	13,225	3,147			662					
1991				21,200		THE MENT	497		PAR SUNGERS SEE		CARREST SERVICES		•
1992		958555	3,478				\$41/66165						
1993	\$150.545 11564 6 44 4554	Mus SAMA MESSA CINSON	5,452	17,665	1,609	, a constant for the second	Signification of the control of the	1,126	800 040 80 A 100 A 10	8820#) (PS-029 4.1)		Rej júly Nulvici.	4, 600, 7157, 376
1994		Erger Sta	651	32,099	4,239	S. F. Maria	563	2,119	11/2/12/13/17				ayang
トフフマ				Service of the servic									
1995 1996			2,172	33,909		st (number		brood year					
1995 1996 1975			CONTRACTOR OF SECURIOR SECTION	33,909 Fe		st (number				in the second			
1995 1996 1975 1976			CONTRACTOR OF SECURIOR SECTION	33,909 <u>Fe</u> 5,468	male harve	st (number	of fish) by	brood year	 				
1995 1996 1975 1976 1977			CONTRACTOR OF SECURIOR SECTION	33,909 Fe	male harve	st (number		brood year					
1995 1996 1975 1976 1977 1978			CONTRACTOR OF SECURIOR SECTION	33,909 <u>Fe</u> 5,468	emale harve		of fish) by	brood year 304	 133 569				4
1995 1996 1975 1976 1977 1978 1979 1980			CONTRACTOR OF SECURIOR SECTION	33,909 Fe 5,468 6,926	456		of fish) by	304 					
1995 1996 1975 1976 1977 1978 1979 1980 1981			CONTRACTOR OF SECURIOR SECTION	5,468 6,926 39,360 40,106 14,783	456		of fish) by	304 					
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982			CONTRACTOR OF SECURIOR SECTION	33,909 Fe 5,468 6,926 39,360 40,106	456		of fish) by	brood year 304 266 4,097 6,633 956	569 514				
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983			CONTRACTOR OF SECURIOR SECTION	33,909 Fe 5,468 6,926 39,360 40,106 14,783 2,869	456 266 647 5,117 1,567	216	272	brood year 304 266 4,097 6,633 956 14,203	569 514 229				
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984			2,172	33,909 Fe 5,468 6,926 39,360 40,106 14,783 2,869	456 266 647 5,117 1,567 915	216	of fish) by	brood year 304 266 4,097 6,633 956 14,203 1,567	569 514 229 68			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985			CONTRACTOR OF SECURIOR SECTION	33,909 5,468 6,926 39,360 40,106 14,783 2,869 11,876 12,078	456 266 647 5,117 1,567 915 1,283	216	272	brood year 304 266 4,097 6,633 956 14,203 1,567 4,457	569 514 229 68 619			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986			2,172	33,909 5,468 6,926 39,360 40,106 14,783 2,869 ————————————————————————————————————	456 266 647 5,117 1,567 915 1,283 3,015	216	272	brood year 304 266 4,097 6,633 956 14,203 1,567 4,457 17,386	569 514 229 68			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987			2,172	33,909 5,468 6,926 39,360 40,106 14,783 2,869 11,876 12,078 11,008 22,622	456 456 266 647 5,117 1,567 915 1,283 3,015 1,029	216	272	266 4,097 6,633 956 14,203 1,567 4,457 17,386 14,400	569 514 229 68 619 129			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987			2,172	33,909 5,468 6,926 39,360 40,106 14,783 2,869 11,876 12,078 11,008 22,622 13,244	456 266 647 5,117 1,567 915 1,283 3,015 1,029 2,008	216	272 	304 266 4,097 6,633 956 14,203 1,567 4,457 17,386 14,400 2,008	569 514 229 68 619			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988			2,172	33,909 5,468 6,926 39,360 40,106 14,783 2,869 11,876 12,078 11,008 22,622 13,244 38,146	456 266 647 5,117 1,567 915 1,283 3,015 1,029 2,008 3,527	216	272 113	304 266 4,097 6,633 956 14,203 1,567 4,457 17,386 14,400 2,008 1,322	569 514 229 68 619 129			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1988			2,172	33,909 5,468 6,926 39,360 40,106 14,783 2,869 11,876 12,078 11,008 22,622 13,244 38,146 6,966	456 266 647 5,117 1,567 915 1,283 3,015 1,029 2,008	216	272 113	266 4,097 6,633 956 	569 514 229 68 619 129			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1988 1989 1990			2,172	33,909 5,468 6,926 39,360 40,106 14,783 2,869 11,876 12,078 11,008 22,622 13,244 38,146	456 266 647 5,117 1,567 915 1,283 3,015 1,029 2,008 3,527	216	272 113	304 266 4,097 6,633 956 14,203 1,567 4,457 17,386 14,400 2,008 1,322	569 514 229 68 619 129 88			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991			2,172	33,909 Fe 5,468 6,926 39,360 40,106 14,783 2,869 11,876 12,078 11,008 22,622 13,244 38,146 6,966 54,656	266 647 5,117 1,567 915 1,283 3,015 1,029 2,008 3,527 7,619	216	272 113	266 4,097 6,633 956 	569 514 229 68 619 129			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992			2,172	33,909 Fe 5,468 6,926 39,360 40,106 14,783 2,869 11,876 12,078 11,008 22,622 13,244 38,146 6,966 54,656	266 647 5,117 1,567 915 1,283 3,015 1,029 2,008 3,527 7,619	216	272 113	266 4,097 6,633 956 	569 514 229 68 619 129 88			192	
1995 1996 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987			2,172	33,909 Fe 5,468 6,926 39,360 40,106 14,783 2,869 11,876 12,078 11,008 22,622 13,244 38,146 6,966 54,656	266 647 5,117 1,567 915 1,283 3,015 1,029 2,008 3,527 7,619	216	272 113	266 4,097 6,633 956 	569 514 229 68 619 129 88			192	

Appendix A cont'd (China Poot: page 4 of 4)

Age Group

									Age	Group	1											
Year	r 1.1	n	1.2	n	1.3	n	1.4	n	2.1	N	2.2	n	2.3	n	2.4	n	3.1	n	3.2	n	3.3	n
1980			46.83	37	1.27	1		Male	e age c	ompos	sition b	y harv	est year					•				
1981		renegas Evitagas	30.85	25	1.24		2538		2.47	2					100		180.5				3-3-17	1943.
1982		0.01 Mar 2000		*** : *		ernem beskete	140,000,000	escandor forc		rergiospes artico.		1+8-01-01-12F0F		-90 to 2000 No	******			- 10 (40)				
1983 1984	0.90	- 5	44.27 53.31		0.18	1. 9	Organia	989JU	1 4 5 6 5	KI SER	0.36 1.45	2 7	0.36	. 2				47,742				30.91
1985	(388343)		26.40		11.22	34	0.33	1			14.85		U.Z1	1			Barat Cons			Series		<i>5</i> 585
1986	680613340235	(catalon and	43.75	7	31.25	5	860 जगन र ङ्ग -	ΣΩΣΣ Α.ΔΙ ΘΕΎΣ	reign a Millia a Sailea	: Mar Cant with	DATA CAR	min ita	2006.1989.02568	ME 0.00 (65)	4.W\$00,613() 5.64	M6488001111111	92.7079 A.99	Serence (See	naraansu:	30%, 150 47	46. 14.100	The Mont
1987							******	7 A L												SOM.		
1988	1.77	20	20.25	204	2.09	19		TEET.	1.85	20	27.15 7.24		2.21	21	935000000000	32782538	415-885-56E	Tracent	WENCESSA.	184 374 74.19	89 (100 (100 (100	18/51/40
1989 1990	0.43 1.81	4 8	46.36 24.94		3.70 6.12	35 27	V17480-E5	(CONTRACT)	0.10	1 3	9.75	70 43	0.86	, 8 1	ek (yen)	M.(A.9%			150450	rig stefel		1085.Jul
1991	1.01				2.41	22		encres.	0.51	7	18.18		0.36			474.28K			0.43	2		
1992	2.42	12	25.25		1.82	9	INDVIKATION	1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	1.01	5	23.64	117	0.61	3	- 1845/1775-0-51/202	Section for the same	-monacourt and a	Self-free District	en numeron. n	- MANUAL STREET	MARCHEN AND THE	. 105 P* 0600 0
1993	· · · · · · · ·			1.50		20				SHAR	2.20		77.77						4	iste ja	A Arria A	GEBY.
1994 1995	3.77	21	45.32 22.98		9.67 3.41	32 19	TO ANGLE	TIMBUS	0.54	3	3.32 0.72	11 4	0.30	i					3944.99	Water 1	35.953	MEAL.
1996	4.45	6, 21 (1997)	39.54		2.97	17		ijin jiya w	. 0.07	araige, e air	0.33	2	K16N1784119	90.05UN	idel (Displace)	94 21 MASS	2015/01/16	Personal Control	Affrija (August):	985,4000	ARCHIVE CLAS	and they
1997	1.50		40.70	210	8.90	46					1,70	9.				CARAS		Darke L		i i k		
1998	2.70	15	39.90		2.00	11	esanes Baneser	envisoritus iterit	0.70	4	1.40	8	of the property of	resummerche	erruges es parcerass	cosseries o	8488-0997-A-1490A	vissentickshi	an usseemen	de North Control	Code comunicati	regards a regist
1999 2000			32.0	129	4.00	17			100		2.00	9		na servi	Post, Ele	91009720			F. W. Kerlik		733.74	Datis Self
2000								Femal	e age o	compos	sition b	v harv	est year					-				
1981			62.96	51	170			447		2						Najv	166.40			76745		
1982						ritor en 2009te		1,204-02/05/50/8		a esperator es		SP RATES	estuare transc	encolesce extrac		Joseph Toronto		transis viscosis		i fotodorno e su		r order - collection
1983			53.05	erran er versie	and the second second		0.21	1			0.36 3.93	2 19	0.18	. 1					60,000			534781
1984 1985	76051760		38.43 25.74				0.21	l			3.93 11.55		0.99	3					(55284)			2004 C - 140-1
1986	skeletata, est	ASPASSA LICAN	18.75		and the second	ar o m rigo	(1962-WO 1017)	Progress and	Marine Color	34695774.500	6.25	1	310/ MEG 888				084483438	-0.697769K	88.55256	last transcription	1988(10254-15758	osta Arrigan
1987																944						
1988	0.0	9	1 18.69				0.09	1	0.18	2	22.36		0.81	8	Stansvalan	100 (1000) 2	ragata, com	S2641.247.24	3/455/45/2019	%E023130	38877.8559F7S	CEASON.
1989 1990		Marian D	33,74 36.96			23 19				386313965	4.38 14.96		0.64	6 1	Arabata			9495		W. Carlot		:5072.
1991		A. 200	25.44					1014			19.55			4	Y (8)	4449		94545	0.22	1	W. P.	
1992	OF 16 JOSE 1400 ST000	no near no se se se se	20.81		1.62	. 8	Last root year tree to the	Very medicales	M 97.1879(701200)	overstern i stesse	22.62	112	0.2	1	8 - e 200 - 100 100 100 100 100 100 100 100 100	ORNANES, ESTABLIS	NATIONAL DISTRICTION OF	an armana ray		**********		7 MARCH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1993		–	23.87		12.09	40			 0.6		4.53	15	0.3	1		Maria Maria		300				
1994 1995			23.87 59.23	array out a const	face concentration of		0.18	1	0.18	2	0.72		د.ں	1					0113513	#10675	Processes	130 E-750
1996	ile: (12.4.25.25.25.65)	0508888	49.42	republic to the results				erand e na		6983346 7 336	0.16	40.50 ptc x20.70 s 20.0	0.5 5002489993	10/10/16/4/03	(1986 S 1886 S 19	78334845 <u>-</u> 98	275038667278	830 BK2		478,54444		TOTAL PROPERTY.
1997	0.20) 1		183		55			0.20	1	0.80											
1998	FIRE STREET SOLE	49.6	0 49.60	CONTRACTOR CONTRACTOR	110 7.00	6 27	\$55555555	2565787972	#5577%#A7X	neaesca.	2.40		0.02	1	·iggergaccos:	ierostwa.	55505654678	G000000000	50 (10 (20 (20 (20 (20 (20 (20 (20 (20 (20 (2	MERCUANI	r setti terrelik s	997339886
1999 2000			52.0	219	7,00	41		(2007)	(04)3533		3.00	12	7.74(%)		or stall					60.AGA	e Salanda	2012
2000									E	Both Se	exes							·				
1982				-				6.0000000000000000000000000000000000000		en even en en en en en en		Sattement va. 12 ve	*****	****								-
1983							A 21															
1984 1 985		107.65(7)C			1 2.48 3 20.13		0.21	1			ent or complete the complete	26 80	0.21	1		PONTON		(36.00E-10.00	200 E C F C F C F C F C F C F C F C F C F C	(8 9 856)		F57#1759
1986			62.50		31.25				F10, 13, 4344		6.25		0.22	200-110	404066	8063787		140000	25175176	MARKET COLOR		Manage.
1987		<u> </u>	4	-									منت ا							7. 35		
1988		wednest went to the contract of	1 38.94	40	4.56	42	0.09	1	2.03			473	3.02	29								
1989	Contract Michigan Services in		4 80.10	200000000000000000000000000000000000000	\$44,000,000,000,000,000	tiggs and patient to the			0 1140000 00 0	1				EL STANDONS DIN SINS		Q F		SZE OBI				
1990 1991) 1	8 61.90 54.20		5.80			150000	0.68 0.51	e intercentary interests		109 3_322		2 8	1.5	245456			-0.65	3		704 B
1992	2.4	2 1	2 46.00	228	3.44	17	P 1	284-827034	1.01	13,3004 (1,000°91°90°00000		229		4								
1993	· 13											(1) (1) (4) 2 (1) (1)										
1994			69.19	229	21.76		A46	70599 4 970	0.60		7.85		0.60	2								
1995 1996	. 2000 a con a con		1 82.2. 5 88.91				n.18	1 .	0.72	. 4	1.44 0.49	8 3				40.07.0	adort de			WAR.S		动脉形
1990			76.10						0.20	1		13		480740						ZEFE.		
1998	2.70		89.50	495	3.10	17			0.70	1 4	3.80	21	0.20	1						- 12 17 PAR - 17 P	-raginal R. 19	processor (Francisco)
1999			84,00	348	11.00	44					5.00	21										7454
2000	<u>' </u>																					

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Appendix B. East Nuka Bay: age, and mean length and weight (± Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates no data were collected during that brood/harvest year; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

Marcuto oscupernent unia, Carculateu Illeans	reflect corrections made to previously reported data. Age Group
ear 0.2 SE n 0.3 SE n 0.4 SE n	1.1 SE n 1.2 SE n 1.3 SE n 1.4 SE n 2.1 SE n 2.2 SE n 2.3 SE n 2.4 SE n 3.1 SE n 3.2 SE n 3.3 SE n
	Male mean length (mm) by brood year
970	603 NA 1
971	613 2:68 59 550 4.00 2
972 844	606 3.14 56 546 25.63 5
973 617 16.00 2 974	482 15.53 4
975	
976	相性病性病性,因为自己的主义,是一种自己的主义,但是一种自己的主义,是一种自己的主义,但是一种自己的主义,但是一种自己的主义,他们也是一种自己的主义,但是一种自 第一章
977	589 7.53 3 534 NA
978	577 2.92 51 569 8.50 2 526 2.98 23 582 6.17 19
979 546 8.39 3	512 3.39 35 573 3.78 59 511 8.76 8 573 4.35 13
980 512 NA 1	506 2.09 154 571 1.82 144 570
981 982	500 5:16 18
983	582 3.00 71 573 3.00 40 537 5.00 20 594 8.00 15 581 4
984	507 5.00 10 579 3.00 83 543 13.00 3 572 4.00 43 538 NA 1
985 617 NA 1	518 4.00 45 576 2.00 229 503 2.00 76 574 3.00 58
986 530 NA 1 585 18.00 3	497 3.00 65 579 3.00 96 516 6.00 22
987	504 6.00 15
988	567 520 568 7.00 16
989 990	515 582 2.00 86 505 2.00 48 578 NA 1
990 991	500 2.00 58 580 1.00 202 350 7.00 2 548 NA 1 524 2.00 116 585 3.00 71 588 6.00 19
992	531° 2.00 94 580° 2.00 210 510° 10.00 13 569′ 8.00 5
993	526 5.00 66 566 2.00 146 5313 8.00 11 578 6.00 4
94	494° 3.00 47 567° 2.00 124 528° 4.00 15
995	506" 1.00 108
	Female mean length (mm) by brood year
972 973 574 12.00 2	587 (2.29) 92 505 12.97 Å
973 574 12.00 2 974	524 13.65 8
775	
76	
77	592 NA 1 572 3.48 3 554 3.00 2 547 NA
778	560 1.86 70 544 3.00 2 504 4.91 23 530 8.87 10 —
979 562 18.50 3	500 3.36 48 549 2.37 82 340 NA 1 485 5.81 17 539 4.67 22
80 549 NA 1 81 547 NA 1	490 1.96 159 549 1.52 160 - 498 5.60 29 - 565 NA
81 547 NA 1 82	487 4.50 36 506 NA 1 503 NA 1
83	558 3.00 55 508 4.00 36 565 5.00 28 551 9
84	
85 502 NA 1	504 3.00 56 549 1.00 296 585 NA 1 481 2.00 87 553 3.00 75
86 512 NA 1 553 8,00 6	482 3.00 93 555 3.00 133 495 4.00 38
87	491 4.00 30 551
988 189	
789 990 488	491 556 1.00 86 604 NA 1 493 2.00 79 570 0.00 3
991 991	492 1.00 90 556 1.00 287 530 26:00 3 505 1.00 176 558° 3.00 79 560° 30.0 2 546° 5.00 20 545° NA
992	505 1.00 176 558° 3.00 79 560° 30.0 2 546° 5.00 20 545" NA 508° 2.00 131 550° 1.00 210 488° 5.00 16 535° 7.00 15
993	508 2.00 131 330 1.00 210 488 3.00 16 333 7.00 13 509° 3.00 105 536° 1.00 126 495° 5.00 22 554° 9.00 5
94	
77 95	485° NA 1 485° 2.00 118 552 2,00 69 493° 8,00 11 493° 1.00 115
•	495 1.00 115

^a Delight Lake escapement; ^b Desire Lake escapement; ^c Delight and Desire lakes escapements combined

Appendix B cont'd (Nuka Bay: page 2 of 3).

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Year 0.2 SE n 0.3 SE n 0.4 SE n 1.1 SE	n 1.2 SE n 1.3 SE n 1.4 SE n 2.1 SE n 2.2 SE n 2.3 SE n 2.4 SE n 3.1 SE n 3.2 SE n 3.3	SE n
	Male mean weight (kg) by brood year	
1077	3,37 0,15 3	ADDITION OF THE SECTION
1977	3,14 0.06 51 3,10 0.05 2 2.35 0.05 23 3,16 0.15 10	dominer e 1985 •
1979 2.87 0.49 3	2 18 0.05 35 323 0.10 29 210 0.05 2 3.13 0.12 10	404644644
1980 2.55 NA 1	2.18 0.05 54 3.12 0.04 94	
1981	2.16 0.08 9°	
1982 1983 ————————————————————————————————————	3.55 0.25 6	SSORT A SUS DILEGO
1983	3.53 0.10 3 2.33 0.47 2 2.58 0.33 10 3.70 NA 2 2.11 NA 1	- - NW 1
1985	2.25 0.27 4 3,57 0.12 15 2.68 0.18 4 2,33 0.24 4 ,242	
1986 2.10 NA 1	2.34 0.12 8 2.35 0.16 14 1.76 0.04 5	
1987	$1.61 \cdot 0.27 \cdot 2 \cdot \dots $	and the state of t
1988		47/47/51 - VA
1990	1.78 0.10 7 3.21 0.08 22 0.63 0.01 2	MB 400 st. hoofs
1991	2.35 0.07 15 324 0.27 7 2.68 0.14 9 —	
1992	2.23° 0.06 12 3.12° 0.04 131 2.19° 0.18 7	neuropythyda i far da
1993	237° 0.09° 43°	
1994 1995		AUT HER BASE
	Female mean weight (kg) by brood year	<u> </u>
	Female mean weight (kg) by brood year	<u> </u>
1977	2.80 NA 1 2.62 0.05 3 2.20 NA 1	
1977	2.80 NA 1 2.62 0.05 3 2.20 NA 1 2.74 0.06 70 1.92 0.06 23 2.38 0.11 6	
1977 1978 1979 2.65 0.34 3	2.80 NA 1 2.62 0.05 3 2.20 NA 1 2.74 0.06 70 1.92 0.06 23 2.38 0.11 6 1.91 0.04 48 2.63 0.04 45 0.65 NA 1 1.93 0.15 6 2.66 0.12 10	
1977	2.80 NA 1 2.62 0.05 3 2.20 NA 1 2.74 0.06 70 1.92 0.06 23 2.38 0.11 6 1.91 0.04 48 2.63 0.04 45 0.65 NA 1 1.93 0.15 6 2.66 0.12 10	
1977 1978 1979 1980 1980 1981 1982 ————————————————————————————————————	2.80 NA 1 2.62 0.05 3 2.20 NA 1 1.92 0.06 23 2.38 0.11 6 1.91 0.04 48 2.63 0.04 45 1.93 0.15 6 2.66 0.12 10 1.94 0.08 16 1.94 0.08 16 1.94 0.08 16 1.94 0.08 16 1.94 0.08 16 1.95 NA 1 1.9	
1977 1978 1979 1979 2.65 0.34 3 1980 1981 1982 ————————————————————————————————————	2.80 NA 1 2.62 0.05 3 2.20 NA 1 ——————————————————————————————————	
1977 1978 1979 1980 1981 1982 	2.80 NA 1 2.62 0.05 3 2.20 NA 1 2.74 0.06 70 2.74 0.06 70 23 2.38 0.11 6 2.50 0.04 48 2.63 0.04 45 1.92 0.06 23 2.38 0.11 6 2.66 0.12 10 2 2 2.38 0.18 0.03 54 2.65 0.03 95 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
1977 1978 1979 1979 2.65 0.34 3 1980 1981 1982 ————————————————————————————————————	2.80 NA 1 2.62 0.05 3 2.20 NA 1 2.74 0.06 70 2.74 0.06 70 1.92 0.06 23 2.38 0.11 6 2 1.92 0.06 23 2.38 0.11 6 2 1.92 0.06 23 2.38 0.11 6 2 1.93 0.15 6 2.66 0.12 10 2 10 2 1.84 0.03 54 2.65 0.03 95 2 1.94 0.08 16 2 1.94 0.08 16 2 1.95 NA 1 2.95 NA 1 2.95 NA 1 2.95 NA 1 2.95 NA 1 2 1.95 NA 1 2 1.95 NA 1 2 1.95 NA 1 2 1.95 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.2	
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1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988	2.80 NA 1	
1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989	2.80 NA 1	
1977 1978 1979 1980 1981 1983 1983 ————————————————————————————————————	2.80 NA 1	
1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989	2.80 NA 1	
1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1989	2.80 NA 1	
1977 1978 1979 1979 1980 1981 1982 1983	2,80 NA 1	

-continued-

								Age	Group_					
Year	0.2	0.3	0.4	1.1	1.2		1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3
					Male har	vest (numb	er of	fish) b	y brood	year ⁱ				
1977	est Carl attended	JOSEPH SANDONS	268 268 e 17 17 E e 19 C E	PERSONAL PROPERTY AND A PROPERTY AND	22522 / 2 04 2000	escarro exces	hi sugainsi	GROVED'S BAIR	priesion invitable	Contrar Sentimentary	sangign parameter	gengalantasitas	or, anggerossans	209
1978						825-31-56-4			AC 534					U ()
1979	SECTION CONTRACTOR	2000-200-200-200	Neterration - coss	i jarokoristiko	reding of least tracky	***	10875557T	TERMORES	A 666	2,713		e sero elemento de	 (\$1,895,92,585,6795)	POSTORIAL SESS
1980				-0.00	27.7	30,057		ener.	2,922	Y THE				.28
1981 1982	ZAMPASTONETH			MICOGRAPIA	3,757			- 2000 S. S. S. S.		1,993				HARRISH HAR
1982	Medition.	Karsinero.	300000			1,123			562	1,993 466	19654	Algoritz Algo		7
1984					281	2,579	WEAR)		93	242		3/2/12 - E-3	4	
1985		31	955 But But 146	iforia citt	1,398	1,401	ALBEIT	A GOVERNME	453	216	*****	ietijijiky-Csa		Julian Taylor
1986	31	14			408	358	1775		82					
1987	or or the	essante Cellect		(4.38) pt. 16.204(d.92)	56		rin agr. 59	pel compres		728	CIMA CANCAL AND FO	TO 25, 2000 CONTROLS	99999999999999999999999999999999999999	
1988						478		2772	166	196				
1989		28	PROPERTY OF STATE	***************************************	353	1,054	20 (2000) 2000 	200.00 (. tr. 60)5.99	588	22	Tagain tha gertal (1995) of the separa-	HANGISTA DARRAM	Ti-Berginstangeritikan birang	(Mary 21, 1988) - X((())>13)
1990					710	4,508		24	22					
1991	The second secon	in the same of the	AND THE RESERVE OF THE PROPERTY OF THE PROPERT	00 / 2 / 1 / 2 / 1 00 1 00 00 00 00 00 00 00 00 00 00 00	2,588	AND TO COMMON TO SHOW A STATE OF	919an in 1901		************	181				
1992			127			1,973			125	160				
1993	noncomercial control	SERVICE DESIGNATION OF	ROME STANCES CONTROL	rept merentepross.Ca	624	4,764	CONTRACTOR	MANAGA SAN SAN	352	511		ezonek anerezone Sakonoko	marios care decisiones d'orio	CONTRACTOR CONTRACTOR
1994		Design	5 00 4		1,535	14,313			1,534					
1995					12,268		1	F.F1 \ '						
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1977 1978			55.5		F6.5574 (1.04.04)		5947 <i>0</i> 1						902300 <u>0</u> 2762	209
1978			an En 1970	10 mg 10			16023	24-31-58 	Control	4,592	1968 AC 197		(2007) (1) 	
1980						33,395	25470		6,053	.,	700 <u>227</u> (8			28
1981		209			7,514		(1993-1998) 	Pragratin			28		28	
1982									74444	1,854				
1983			Medicary resources			1,544	10. 1 mily 1996. A		1,011	870	ALIMATORING PROJECT	W11.001.00		15
1984	, -				674	2,734	:5	28	280	320			4	
1985	T-00-1-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0	31	- North Assettate of Assettation of the	TVVI AMALONA AMAZIY	1,740	1,789	4	er int a grant and a	501	279				
1986	31	28			. 567	494			142					
1987	attitude en	necon en receivab		rie commonent	112		manaces yes	Freiniperopyen		713		nampana ketas caratana	nuar constant venters	464700700700000000000000
1988						471		Associated 1	208	220			12	
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1992	519 \$-77 F.W.	ER MONTH		svætens.	987	4,092	a.699494		719	490 511		3.00(12):5763.		
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1995		08.2675-3767	30300007AB	• •	12,779	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	e:1505 4 0	LOUZINJEA	*****					
1775					14,117									

¹Age composition calculated from Delight Lake escapement sample.

Appendix C. Aialik Bay: age, mean length and weight (± Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates no data were collected during that brood/harvest year; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

				•	•				•									Α	ge Gro	up	-											
Year	0.2	SE	n	0	3	SE	n	0.4	SE	Ξ	n 1	.1	SE	n	1.2	SE	\mathbf{n}	1.3	SE	n	1.4	SE	n	2.1	SE	n	2.2	SE	n	2.3	SE	n
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1987	478	NA	1	duting constitute	neoretano	NIC STREET		***********				t regarder of the		W-045C-0-103	496	8.00	29					10-73 (200 B.C. D. T	MIN 602 - 10.7 2	I DOMAND JOS.		MATINE AND A	oux sees stoods	.at surv.rure	14 (La) - 45 (15) (15)	entre to a const		
1988 1989											a e e a e	7				Variation.	400			.						Y (L.C)			. S. C. S. S.	Garay.		
1989	US-250	SSAF	2007 XX	President		41300		60.000	SECTION S	870380		13983	(0.000110.000	040559		(85 K) (18		569	2.00	ារលំ	LNGCZ 18	844.Ce.		9149.F		2 5562544.	534	⇒ NA	V\$70 1 195	011	NA	
1991	NEST CHE	3664#J	Popular Pros	1012 AUS			822 BS		SE 44 (K.S.)	ACKER DE	507540	(368)	- 1	251,2254	513	3.00	64	J00	£.00	1.10	51 38 T. 18	ansana.	******		P0211-319	(8) (JKK)	*******	117.	**************************************	kjärgristatu	40.98/A/A	ffice bef
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1984 -	 -)		in de la companya de La companya de la co	51	6. ,	ŅĀ	. 1		100										1.00		632	NA	1			a a gradua				√594 <u>.</u>		
1985	ámeir astás.	dinas-	334000 re-ce	go Vesta Sésse :	2271-250	Alconom	a reconstru	stressiersserser.	Jacob Medico	enacións.	oniër invontiika	a mile arms	KE AL MIREL SANK			3.00			4.00		more regulations.	a raka sa ya	and Million	. S. A. santa a sa	vist Visible expedi	a se racailea			137		2.00	149
1986 1987		333	70000				\$2.50°				West III.							544	3.00	- 68				6/38/1/17	:9190XX	604 V 10 1	> 501	4.00	37	96 W		
1988		9144		. 10,122			86)CS		8468754	5.02C					490	5.00	29	122514				ya sa sa ƙ				(6.3 4. 14		alay Finis		38 4504.0		
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1990							(5)(6 <u>5</u>	MON.						12.70	5.15		e viin	548	1.00	191						n i j	496	15.0	5			ing dia
1991	Section and the	áncs sei	COST Sewar	i si kalan sangana	iolute.	200 04.16	FLOCO T34:1	Na amazina agina sins	. continues o	50V5.0.150	emiliani	Sugar steel	On a series over	Mar are and	497	1.00	154	recurred and			R/18 100 100	sonarderme	e ográfica mente.	. Tarda va vac er en	SaySana saasa	eta masti ze e	n Billionarias	in decident	e total esse const	and the second	ma some	
1992 1993	MIN'S	erici Erici									5	15	NA	1	40-			561	2,00	60				416	N. A.		460	NA	1	وللتوالي		
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Appendix C cont'd (Aialik Bay: page 2 of 4).	Age Group
Year 0.2 SE n 0.3 SE n 0.4 SE n 1.1 SE n	1.2 SE n 1.3 SE n 1.4 SE n 2.1 SE n 2.2 SE n 2.3 SE n Male mean weight (kg) by brood year
1978	3.16 0.10 8 2.67 0.21 3 2.90 NA 1 0.06 38.00 3.34 0.07 38 4.80 NA 1 2.37 0.28 2 3.76 0.14 14
1979 1980	2.42 0.06 54 3.50 0.07 51 2.56 0.12 17 2.86
1981 1982	2.10 = 3.76 0.17 4
1983 1984	3.37 0.35 9 1.55 NA 1 3.45 0.50 2 2.44 0.19 6 3.80 0.16 20 2.45 NA 1 3.10 NA 1
1985 1986	1.59 0.22 4 3.69 0.19 7 2.61 0.10 15 2.86 0.08 17 2.48 0.52 4 2.96 0.13 5 2.11 0.18 3
1987 0.80 1988	2.10 0.22 6
1989 1990	3.28 0.10 16
1991 1992	2.47 0.14 4
1993 1994	
1995	Female mean weight (kg) by brood year
1978	2.94 0.09 14 2.85 NA 1 2.55 0.00 1 3.00 0.05 2
1979 1980	2.03 0.05 43 2.93 0.05 59 2.33 0.08 2 3.20 0.10 12 2.01 0.04 56 3.04 0.04 54 2.66 0.21 7
1981 2.95 NA 1 1982	2.28 0.08 9 3.40 0.13 3
1983 1984	2.91 0.31 7 2.20 0.50 2 2.95 NA 1 1.88 0.13 13 2.99 0.07 31 1.80 0.05 2 3.10 NA 1
1985 1986	1.97 0.14 9 3.10 0.21 3 2.02 0.08 18 2.37 0.05 25 1.85 0.04 6 2.42 0.09 11 1.96 0.14 5
1987 · · · · · · · · · · · · · · · · · · ·	1.76 0.08 5
1989 1990	2.52 0.07 22 1.81 NA 1:
1991 1992	2.02 0.05 13
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1995	

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Appendix C. cont'd (Aialik Bay: page 3 of 4)

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Year	0.2	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2,4	3.1	3.2	3.3
						Male harv	est (nu	mber of	fish) by	brood year				
1978														
1979 1980		TORESCRIP	5683-74568	energia de la compositione de la c		istean koosuse	9/25-005-154		0640400413	SO MAN THE STORY OF A STORY AND A STORY AN		COMPLESSIVE)	nassaet	
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1986		14	Katalasi 1	9	1,056	723 376			1,824 218	1,020 68				espanii
1987	14	98 2043 TO J 908 J.		012-640ar-146-147a	287	1,115	P85443-50963	518,5694-966.5°C	30 100 11 0 100 111 11 11	159	SACRETRICTIC WORLD	(Wilder Angle (1942)	24,4850000000	84A1748E7517547E
1988					67	256			287					
1989 1990					798	408			4	4	 gr <u>ave</u> 2000			
1991			######################################		238				#16 7 5 7458	1979spa - 1976 	2007000000000			2002405980
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1996														
i ogó .		26 50 25 25 25 44 85 G	ostronera era	Experience experience	F	emale har	vest (nı	ımber o	f fish) by	brood year	ETELEPIANEA A WY	en come en en en		
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1981	2.10×1.0×190/190/00	DANGER OF A STOCK			Company of the state of the sta			Marka Jawa Caran	entere en entere en		and the second second second second		-control with the first the	Artisch Giffel (A.D.) - Ma
1982 1983						4,799			742	-2,312 92	A BUSINESS OF LIN		K olfabil	with a total to the
1984		44	JOHN CHIEFE	<u> </u>	4,800	4,799	14		118	92 87				
1985	7-44020000000000000000000000000000000000	are order to const	STEP AND HELPTONES	Celifo o STA CALSON	369	810		\$186.KW 16688	1,982	1,476		38151873804 753675	29/9/24 N. V. C.	# 1703 h / No. 25496
1986					955	673			366	67				
1987 1988					287 68	1,115 255	94590		287	160		kalistis (
1989		1920/19-79			798	492	4	386602145	201	4				
1990			XPYS			709			19					
1991 1992	328.549895	3880 078 250	 Elabanassas	enel p erie	573 				MORTEN PROPERTY.			edota eseresco	 44899477498573	SOLVETTO (C. 1811
1992	244 WAR				287	906	7.27438	15	00 P	es de l'estation				SE PARTIE
1994					BEALTS									
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Appendix C cont'd (Aialik Bay: page 4 of 4)

											Aį	ge Group									
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1999	V 31 1		W. 77	3 719 15										11 A	(33/3)				Prodest.	4 (4 3 3 3 4 7 8	Challetter.

Appendix D. Chenik: age, mean length and weight (+_Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates that no data were collected during that brood/harvest year; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

	Age	e Group													
Year 0.2 SE n 0.3 SE n 0.4 SE n 1.1 SE	n 1.2	SE	n 1.3	SE	n 1.4	SE	n	2.1	SE	n	2.2	SE	n 2	.3 S	SE n
	Male mean le	ngth (m	m) by broo	d year											
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1979	533		20 574	14	4	C-88 -50 20 60 60 60 60 60 60 60 60 60 60 60 60 60	P-72-4 1-28-10		newejsty wyżnie				ese garriera y	e charte	
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1983		uk menuti Manu serban hare	536		520					ALCOHOLOGICA	490	3	48 5	43	5 16
1984 —— 1985	484 494		11 542 62 534	2 2	69 125			324	NIA	707 A	505 485	3 6		23 12	14 4 7 3
1986 537 7 7	469		872 530		148		Market Market	324	NA		492		8 5		
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Appendix D. cont'd (Chenik: page 3 of 4). Zeros indicate that there were no commercial harvests.

						A	age Group	p						
Year	0.2	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2,4	3.1	3.2	3.3
					Ma	le harvest (number o	of fish) by	brood year					
1979														
1980	POLICE PROPERTY CO.		1. / smart 5.097 (00.4 .00)			3,875	ENTRO ALENCESSO AGAI	a and a		**************************************	erer	m with a so a major enter o	Coloradores de la coloradores	
1981			2022-2016		750	3,322	107	4.7.2	6,091		Charles Joseph		. 	
1982 1 983	(10.100.0°)	Voje <u>jakao</u> n		SZEWESTVÝ	59 , 250	63,150°	187		2,951	414 2,504			26.200	9899999
1984		(2000) - 1210 (1860)	98409A3 (1997A)		9,843	8,860	(MANAGARA)	1,079	4,333	588	90 Miles (500)	FL-001FE/SH10,FD		primi ne (fisse).
1985					4,430	9,577			1,120	900				
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1987 1988	90				14,192	3,953			274	L. C.				
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1990		MC1812/Jenesor			10.			MANAGE AND	transara desa.				X15-246-3444-7	
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1774	1997/98/99		\$60 (\$150 a)		encountry of the contraction	le harvest	number o	of fish) by	brood year			<u> 2000-120-00</u>	2574 <u>597894</u>	
1979							42	100		125				ngaga P
1980 1981	Marka Sana	83	Maria de Cara d	New York	700	4,916	ETPELEGER GAP.	OLET STATEMENT	125			2014-000-00-00-00-00-00-00-00-00-00-00-00-0	98/279/2007/95/95/95	
1981	4000000	63		48.00	708 36,546	1,661			4,430	904			aka tu i ki,	V95-0364
1983						65,687			6,063	1,541				
1984			90.96.089.94 (PRECEDE O ALBOA)		13,882	6,644	SON STAGES		4,526	361	938 (2000) A. B. (1904)	445 JAN 1990 (P.) S		394/72466
1985					5,971	10,870		96	1,159	300				
1986		632	R TON ILLENGEMENT CHEC	-AMERICAN STREET	20,602	14,792	1/11/11/14/14/14	KOSSES VIIIPPON TARIGE	800	49	**************************************			W. 2000 (2000)
1987 1988					9,395 3,460	2,717 9,287			46					
1989		X 25 (S X 25)			1,464	9,201			40	,	error and a wind the		r especialistic de	
1990	28.000.000.000.000.00		2 SPECIAL WORK		1910		al Valenti	*****		us village o		SANGER STAN		445,050
1991							707g. 77. 17.00 s				0			0
1992	193 (8678)	NAME OF GROOM		Caracterize control	errolling organizations (non-recover	ZNEKON PREDLEM POR	0	Ordered - Charmon Stage & Charles	POTENTIAL AND ANALYSIS ANALYSIS AND ANALYSIS A	0	0	**************************************	0	0
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1994 1 99 5	50 40 DE	0	0	n	0	0		0 0	0		95965325967	0		nerverer
177)		U.	748858E305	U	U		continue				Markove is			

Age	Group	

									Λį	ge Gro	цþ									
Year	0.2	n	0.3	n	0.4	N	1.1	n	1.2	n	1.3	n	1.4	ņ	2.1	n	2.2	n	2.3	n
							Male a	ge con	nposition	by ha	rvest ye	ar								
1983	75,1275 (4.85) 387 (4.87) 384			3102					12.57		22.64	36				gere Leven	ASSES.			
1984 1985	550453453	25 Ye 15 TA	2055333				8528288	SZESTENS	55.20 7.06	122 18	1.81 36.47	4 93	SPORT		400000000000000000000000000000000000000		4-03000	9534 355	Janes de 1977	produce.
1986	55,63,75,75	30135640	12411.154.555	SQL#544,97	MAKARATA		970. D .	530×390	53.23	214	2.98	12				lki Cest i i	5.47	22	19,300,000	1000
1987												SPX					1.00			
1988 1989									6.00 11.39	83 - 46	38.47 22.77	441 92	0.11		0.66	8	1.80 11.14	21 45	0.25 6.44	3 26
1990	0.13	1	0.64	5	pro virta i propinsi Silan ana esta i regio i San	an engant och	no apple estas en	1900001000	35.39	327	13.61	114	r brigger i kring gave serie Og kopur i kring gave serie	en vario stanco.		ngawan Kalangan Inc. Persebahan agan Bel	1.59	16	0.84	7
1991 1992			SV GOEST	was Kesa		Sywe:	The state of		27.41 29.20	142 85	20.08 27.49	104 80			Market Control		1.93	10	1.74	9
1993								e Allies	5.96	32	48.79	262			0.19	1	1.12	6		
1994 1995		#25.785		24752330	Red Free Coro	(1765) (1765)	er er er er	NSZE KES	50.74 15.19	144 80	15.59 38.77	44 203	0.37	1 1000 (2)			0.37	<i>I</i>	0.27	2
1995			(42-44) (43)	(30)70000)			0.16	1	31.80	179	16.61	94	na ka	y som sty	(S) (\$\text{\$\}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}		0.16	1 1	0.37	
1997								10000	8.30	26	39.80	124					GEAN.		0.30	J_{ij}
1998 1999	 1974 <u> </u>			E 5230					 		 		 (1) (1) (1) (1)				<u></u>	Carrier Carrier	 (4 <u>/</u>	erane Erane
\$30000000000	(4,160±1640; (4±6))	#A.508050637-3	-35"e in 540mblo	900.0000	Tio Tia miskay and	7 5 4586-20.46	Female	e age c	omposit	ion by	harvest	year			9.4659 31.465.7% cos	us and use a	STATE OF THE STATE OF	\$44.000 FT.280	ariii aana aria	Triffens See-
1983		VE 16 (1)				Newson,	24615	2 8 00508	35.86	57	28.93	46	NASSEL		Santin	77/35/24		1,721652	120227-01	
1984	POSTA TAPANA		(70 - A) (* 6075.040.			A4544*00.73	Production		41.18	91	1.81	4					nert 1995 by di Wi	eres para	15.98000 p-	1
1985 1986			0.78	. 2		ASSMIT.		67.78	6.66 32.84	17 132	46.27 1.49	118 6	0.40	1		See toly	1.18 3.98	3 16	1.18	3
1987	<u></u>						<u> </u>		J2.04	132	1.47 						J.76	10		
1988 1989			F.F. T. T. L. S.	Activiza	ers (01.58998)	- 5150 mg/y	463837786		8.46	111 : 62	40.01	520	ikan piata	01355F-F	0.05	05/7/24/95	3.69	48	0.55	5
1989		Made	0.90	7	1957-474	120075	Second	a Northead	15.35 29.29	272	17.08 15.45	69 125			0,25	1	11.63 1.65	47 15	3.96 0.51	< 16 4
1991									18.15	94	28.57	148					1.55	8.	0.58	3
1992 1993				F8825	A SPACES				24.06 5.96	70 32	18.90 37,80	55 203		A TOTAL			0.19	1	0.34	1
1994		::::::::::::::::::::::::::::::::::::::	energy of property.			e need on the trade		e april e comme	18.44	<i>52</i>	13.74	39		non september 145			0.74	2		erietzi irone elek
1995 1996			36.24.4			de la company			10.87 33.70	57 190	34.44 17.41	181 98					0.18 0.16	I .	0.18	1
1997	Sale 1			141.573					10.90	34	40.40						0.10		0.30	I
1998 1999						46/50035		Mest S				ercaeana Ercaeana			 35 (58 (5)	78 W 100 T		40.2398		nagrikas
1777		- X (4.38.51)	All Property of	. 10 S. 10 Sept. 10					В	oth Se	xes				<u> </u>	<u> </u>	107.77		Yese The Sale	43,575371
	GOISEEPS 4 OF	- NOTE (2007)				incomerce.	THE STATE OF THE S	aug en en en	4645	(S) (A) (A)				QP.TS.HZ			na mara san	an oppresse	00.01.0859	0.555454-750
1983 1984	7700000000	MATS!			G(3/50)	(A150)			48.43 96.38	77 213	51.57 3.62	82 8		905 jilli		SERVE				
1985			0.78	2					13.72		82.74		0.40	1			1.18	- 3	1.18	3
1986 1987		14,985							86.07 	346	4.47	18					9.45	38		
1988	141.190.01010.1.1.	2384-15-554	men carrony	AMERICAN S		144.145.5	Professional Company	Mark Con-	14.46	194	78.48	961	0.11	1	0.66	8	5.49	69	0.80	8
1989 1990	0.13	1	1.54	12					26.74 64.68	108	39.85 29.06	161			0.25	. 1	22.77 3.24	92	1027-3-1 Stride 1 11.	42
1990		1			againe vo						48.65			100 m		18 E GAS	3,24 3,48		1.35 2.32	11 - 12
1992		ens basati.	12057754957			Called Anna San			53.26	155	46.39	135						W (V2) (W) (V)	0.34	1
1993 1994											86.59 29.33	465 83	0.37	1		osacorrena, s	1.31 <i>I.11</i>	. 7 3	THE KIN	
1995							104.		26.06	137	73.21	384		WATER SERVICE	164, B225 44-00		0.18	I	0.55	3
1996 1997	Raggy Triff		V274,533.	S. F. P. E.		-WA (2006)	0.16	I Particular	65.51 19.20			192 250					0.32 0.60	2		\$1075.E
1998		, pastasii		U SUBŠ		1788Y989						6.000 E. 100 T. 100 T.		98.50 P.2	# <u></u>	r Excellig				
1999	ينت		بيستان	New York							(P) 26.657									

Appendix E. Mikfik: age, and mean length and weight (± Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates no data were collected during that brood/harvest year; italics Indicate escapement data. Calculated means reflect corrections made to previously reported data. *Indicates samples were collected by snagging.

																				Age C	Эгоир												
Year	C).3 ŞE	E n	0.4	SE	n	1.1	SE	1	1	.2	SE	n	1.3	S		n _		SE n			n	2.2	SE	n	2.3	SE	n 2.	.4 SE	n	3.1	SE n	3.2 SE
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1972 1973	Y IV						1243			- 4	154	23.9		STEAR ST	EMG			MARIE.	Antonia.	No orași	Por Kar				e is suit	Alk III II.	žų Vijos	MACEA	975 Q		WINDOWS	Maritin.	
1974 1975				W.							503	F. 500-50		527		5.0	12		No. 2007				E 4.5	NA								MAPE	
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1977 1978					i. Liki					4	199	8.0	5	519		5.0	23																PERMIT
1979 1980		1684516		galtum na galtum na		80E.0									345W		No Carl	505	a nees	2 1149				25191° 5	S	520 1	40	3				9445-53c	
1981 1982		VZ2 Houge	randa. Randada								157		43	52 0		2.0	117						448		13	 515 1	100 A. Y. HERFY	MT 1660-195		e znie augrungsv Radoniji Nergiji	eron gerra akada Postologika 1912	late Mari	enaeros (Auty)
1983	2000	SY SA PARENTYES JA ***** January Barrier Sa Dari		aria aton www.co.co		165139938 720-yewnen		Carron.		/ 1000 PM PM PM PM AND A		2111 K. H. L. K 4065	CHASTINGGE HET JAN	512	1	1.0	190						479	8.0	17	535	5.0	23	(Voltage)	PHORES		Naug (Jaje)	
1984 1985			MANAGANI COLORONA		#356		22 / New York		60 (55b)	4	162 175	8.0	130 26	504	3	3.0	215 88		K HAWS	1946.0	nessia)	WWW.W.	493 471	8.0	28 14	501	8.0	35 5		KELETIKAN			
1986 1987		Maria S	SLOPE!			200				4	41 164	3.0 4.0	98 35	500 506			160 233		arja	ALG	2011		456 446		39 5	491 ; 516				Estant.		Million 4.	
1988 1989							912460			4	43. 57	3.0 - 2.0	19 96	516	S. di	.0	102			7319		anger.			13.*	501			Fig.				
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1993 1994); 	53 NA			lara.			42701			86	8.0	19	 525	72 JA	2	80		n na stá	<u></u>	22 01/40.29		487	3	20			8 K.	s/27-32-46	A Control		FW NG	e filologica Nation
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1970	oki.			an in the same	olina-iscae	à Advata	CONTRACTO	E-minus	A. 4930-30		oactes (ASA)		and person) by broo	od year	The same of the same of the		warde Deleve	2862 25. S				OSSESSED AND		a statubility a			
1971		STGU-FONTAN Shaara Letare		enemate Republic	egszeki Caranta					43		NA.	1	522* 497	9.	VA .24	4	mpre	EX-910913				463	8.21	3				2007a	2010 300	ados cars		
1972 1973										46	52	5.7	10																			SELECT	
1974 1975		Angles (503	6	97	23						448	2.5	2								
1976 1977								100		46	9	10.5	15	513	7.39	91										522 4	.26	9			y Bres		and said
1978 1979							PALA			48	3	16.7	10	213	3.			Section 1		Town			e di					WW.		P. (500)	general de		
1980		is wald		distrib			3 249			Š. (S. S. S. S.									MSFR.	John S	C.	#200				508 % 1	0.0	4 -					460 NA
	. 54	5 NA	i					954		45	8	5.0	33	512		.0	63			Maja			462	4.0	15	 517 : N	NA.	2				NAVY.	ASSA, Ormai
1983 1984	10		4322		4.744		Qeylini			 45	 8	1.0	161	511 531	2	.0 1 .0 1	81 56	403045	ziksett	u. Valik			469 480	5.0 5.0	18		4.0	12 20				or . Or order	
1985 1986			e vertiner		Lestes	on a recommendation of the comment o		lmaeren Oksobbes	ederija Esesa u	47 43	1	6.0	27	511	3	.0	69						456	10.0	9	494	5.0	12					
1987 1988	erance Se vece		erenner in		THE SEEK	Seedes va				46	1	3.0 3.0	58	499 509	2.		98	HEELK					451	3.0 8.0	5	520 5		15		YAREDI			
1989							3/3/4PE	34.4685 -		44 46	The State of State	3.0 1.0	22 110	517	1.	.0 1	08				e energ		467	7.0	and a street of the	510 N	٧A			Mark s			
1990 1991	51	0 NA	1				310	5	8.	44	4 4	5.0	27	502	3.	0 3	30				CHAYNA.		459	17.0	3	501 N						William)	and Andrews (All A)
1992 1993	S.[7]		KWW!				3647	YSPK	(VEVIE)	SERVICE		SPENS		522	ે.ે3 ,	.0 4	16 /16/		Print			aperc.	457	10.0	9	ATTACK A		XXXX		THEW	KAZEKI		with the second
1994										46		8.0	22	512	3.	.0.	82					AV 40260 AV 402646	477	3.0	50	495 2	0.0	3 -4.57507-7 -200-85					
1995											7	1.0	138																				

Year 0.3 SE n 0.4 SE n 1.1 SE n 1.2 SE n	
	n 1.3 SE n 1.4 SE n 2.1 SE n 2.2 SE n 2.3 SE n 2.4 SE n 3.1 SE n 3.2 SE n 3.3 SE n
1971 1972	Male mean weight (kg) by brood year
1973 1974	
1975 1976	
1977 1978	
1979 1980	1.55 NA 1 1.75 0.10 2
1981 1982 1.27 0.06 22	1.76 0.03 48:00 === == 1.20 NA 1 == == == == == == == == == == == == =
1983 — — — 1.66 0.08 17	2.21 0.04 41.00
1986 1.45 0.07 8	
1988 1.19 0.05 2	
1989 1990 1991 1917 0 07 18	1.93 0.09 32.00
1991 1992 — 0.52 NA 1.00 1993 —	
1994 — — — — — — — — — — — — — — — — — —	1.85 0.05 26 — 1.64 0.01 4 —
1996	
	Female mean weight (kg) by brood year
1971 1972	
1973 1974	
1975 1976	
1977	
1977 1978 1979 1980	
1977 1978 1979 1980 1981	1.53 0.18 3 — — — — — — — — — — — — — — — — — —
1977 1978 1979 1980 1981 1982 2.00 NA 1 1.06 0.06 16 1983 1984	1.62 0.06 22.00 —— 1.13 0.05 5 —— 1.13 0.05 5 —— 2.16 0.08 26.00 —— 1.56 0.06 4
1977 1978 1979 1980 1981 1982 2.00 NA 1	1.62 0.06 22.00 1.13 0.05 5 1.5 1.5 1.60 0.06 22.00 1.58 0.06 4 1.78 0.09 17.00 1.58 0.08 2 1.95 0.25 2 1.96 0.06 8.00 1.70 NA 1 1.60 0.01 3 1.62 0.03 34.00 1.31 0.05 12 1.52 0.12 2
1977 1978 1979 1980 1981 1982 2.00 NA 1 1.06 0.06 16 1983 1.51 0.04 21 1985 1986 1.34 0.05 9 1987 1988	1.62 0.06 22.00 1.13 0.05 5 1.5 1.5 1.6 0.06 4 1.78 0.09 17.00 1.58 0.08 2 1.95 0.25 2 1.96 0.06 8.00 1.70 NA 1 1.60 0.01 3 1.62 0.03 34.00 1.31 0.05 12 1.52 0.12 2 1.70 0.05 23.00 1.70 NA 1 1.70 NA 1
1977 1978 1979 1980 1981 1982 2.00 NA 1	1.62 0.06 22.00
1977 1978 1979 1980 1981 1982 2.00 NA 1	1.62 0.06 22.00
1977 1978 1979 1980 1981 1982 2.00 NA 1 1.06 0.06 16 1983 1984 1.51 0.04 21 1985 133 0.33 21 1986 134 0.05 9 1987 1.45 0.04 8 1988 0.99 0.04 2 1989 1.21 0.05 18 1990 0.40 NA 1.00	1.62 0.06 22.00 — 1.13 0.05 5 — 2.16 0.08 26.00 — 1.56 0.06 4 — 1.78 0.09 17.00 — 1.58 0.08 2 1.95 0.25 2 — 1.96 0.06 8.00 — 1.70 NA 1 1.60 0.01 3 — 1.62 0.03 34.00 — 1.31 0.05 12 1.52 0.12 2 — 1.70 0.05 23.00 — 1.70 0.05 12.00 — 1.02 0.04 2 — 1.72 NA 1 — — — — — — — — — — — — — — — — — —

Appendix E cont'd (Mikfik: page 3 of 4). Zeros indicate that there was no commercial harvests.

						Ag	ge Group							
Year	0.2	0.3	0.4	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.1	3.2	3.3
					Male	harvest (num	ber of fish	n) by broo	d year					
1976 1977			NYSANDS WASS	\$1000 F13618		4552	TALING LINE	997-951-00 AS	Tabur Stage	1,386	arnorrogisco	001 K/25/45/4	Događaji se saga	DESTA SKRITER
1977		MARKATA	6.2-92-53566	(d. 44., (d. 67.)	990	4332	ni yawata		MAS EN ESTA		Sudan (a. m.	Million Andrews	557\$1275	
1979			Series and		990				7425.IS		Filipation.	SIBEURY)		93
1980		RANGE SERVICE CA	HARMANIA INS	.4v2/02036-000	147159 F. AMERICA	500945 - 21 CONTO 11 CONTO	186	MORANIA	487 - NASSES 64.	279	0	Materille (1976) in 154 Rejin	0	
1981						10,869	0		1208	0		0		i Yaya
1982			0		3,995	0			0	131				
1983		0			. 0	3,892	(val.	. 0	3 <i>5</i> 2	314				
1984		er val is as communer res	98/55755555750.77	0	2,676	2,933	nu roomessuperor		382	782	580,787798477 KG (1996	29,500,000,000,000	nin semilarningser	ser Opera Aren deduktor
1985				kysteni	355	1,965 3,897			313 950	122				
1986 1 98 7		i a en friends			2,188 853	3,897 1,730		EC784788	950 37	252 37	APOSTAJE U	Barran water		Sint-casts
1988					141	197	Africanie		1000					
1988		Christopic Steries	9509774-98 <u>8</u>	J. 1988 (1988)	185	197	::::::::::::::::::::::::::::::::::::::	40000000	25	5	er en	la rantima e		0
1989		tivi ja tyavay)	CONTRACTOR OF	4	107	36	0		2	0	U		0	U
1991	Vitalijas		0		21	0			0			0		Light Street
1992		0	Springer et et gegen op 100 total	l	0	WEST SALEST FERMINELESSES	3. (5.98%) Pe Bullianski	0	1968) - 1-74849(6)	CERTIFICAÇÃO SERVERO POR SONO	CONTRACTOR OF CL		26-28×13844 A 19-413	11/384(1594(Q)S)
1993	Ö			0	22					4.28577.25E	0	0558805-74553		0
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1995			0		1,359	0			0			0		
1996		0	ungan manakan merapagai	andreas established	0	menda Jeston	trasfina destitita	0	- Miles count in Pr	kolju skretjios religi	tisk generalist to de sette	i karangan di Tiri Badaba	sence rapproaga	erssend, parz
					Female	harvest (nur	nber of fi	sh) by bro	ood year					
1976		er. Jest to database, nearest	constitue is asserted asser-	Auto-consensus various	FAR THE EDWINNERS DO	NAK TIPE Y SOCIATOWNS O	MARIA I sancariono do Farco de	hen basananan aran	ow. soone onne silve oppo	1,782	Principle despression and the fee	150000000000000000000000000000000000000	Ob Beddeler to an in an are	of the Artife Colors and the
1977						7,324						A DESCRIPTION		
1978 1979) Referenciation in s	DOREST CONTROL		ACCIONAL AND	1,979	16. J. T 11 500 FB.		65000000000	71,3717,552	CLS 956-01594		PANESE CONTRACT	81-03/F135 MV F78.C	
1979		fry flam (s. f. e.)							An Calaba	372	0		93	0
1981						5,852	0		1,394	0	V	0		
1982		93	0	i de distribuir i	3,066	0	raataanii	Y-40 Y (\$1 7 % 17 , 17 %	0	42				erranan errena
1983		0			0	3,746		0	381	164				
1984		ANALOGO COMO POR CONTRACTOR CONTR	novembers provincia, a construction	0	3,420	2,129	essoler suvern a new enne	e disconsension no m	355	447	Will the State of the Control of the	Was - 0.000 - 2.000 - 2.000 - 2.000	A 10 10 10 10 10 10 10 10 10 10 10 10 10	
1985					368	1,541	1		201	292				
1986 1 98 7		0.5198888.5155.02			1,629	3,776	S20000750	enerovenea	1,583	134		ingh promoved i	ANGULKATUS Y ESS	TAGETERNASAA.
1988		37.75			1,413 163	1,469 209			37 27	.29				
1989		4.015			213	209			21	1	ń		Eastern to	0
1990		a a sa		15		35	0	es 040/23/6	3	0	essap y det	MENTAL SAME	0	erios y ribili
1991		1	0 .		31	0			0			0.		
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Appendix F. Inventory of archived Lower Cook Inlet adult salmon scales.

				Sample	# of	Data/Scale	Electronic File	
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Year	District	Location	Species	Туре	cards	Location	Location	Comments
1968	Southern	English Bay	Sockeye	Escapement	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1969	Eastern	Res. Bay	Sockeye	Comm Catch	3	Archive cabinet	c:\data_reports\data\salmon\awl	
1970	Southern	McDonald Spit	Sockeye	Set net	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1972	Kamishak	Mikfik Lake	Sockeye	Comm Catch	3	Archive cabinet	c:\data_reports\data\salmon\awl	
1973	Southern	Homer Dock	Sockeye	Set net	4	Archive cabinet	c:\data_reports\data\salmon\awl	south bay set net
1974	Outer	Port Dick	Chum	Comm Catch	4	Archive cabinet	c:\data_reports\data\salmon\awl	
1974	Outer	Island Cr	Chum	Comm Catch	1	Archive cabinet	c:\data_reports\data\salmon\awl	
1974	Southern	Kasitsna	Sockeye	Set net	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1975	Kamishak	Mikfik Lake	Sockeye	Comm Catch	1	Archive cabinet	c:\data_reports\data\salmon\awl	
1975	Southern	Homer	Sockeye	Set net	3	Archive cabinet	c:\data_reports\data\salmon\awl	set net sites?
1975	Kamishak	Mikfik Lake	Sockeye	Comm Catch	2	Archive cabinet	c:\data_reports\data\salmon\awl	and a market company and a state of the company of
1976	Kamishak	Cottonwood	Chum	Comm Catch	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1976	Kamishak	Ursus	Chum	Comm Catch	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1976	Southern	English Bay	Sockeye	7	1	Archive cabinet	c:\data_reports\data\salmon\awl	
1977	Kamishak	McNeil River	Chum	Comm Catch	4	Archive cabinet	c:\data_reports\data\salmon\awl	
1977	Outer	Delight Lake	Sockeye	Escapement	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1977	Outer	Desire Lake	Sockeye	Escapement	10	Archive cabinet	c:\data_reports\data\salmon\awl	AND PROPERTY MENT OF THE SECTION OF
1978	Southern	Tutka	Sockeye	Comm Catch	8	Archive cabinet	c:\data_reports\data\salmon\awl	
1980	Kamishak	Mikfik Lake	Sockeye	Comm Catch	3	Archive cabinet	c:\data_reports\data\salmon\awl	
1982	Kamishak	McNeil River	Chum	Comm Catch	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1982	Kamishak	Mikfik Lake	Sockeye	Comm Catch	3	Archive cabinet	c:\data_reports\data\salmon\awl	
1982	Kamishak	Silver Beach	Chum	Comm Catch	3	Archive cabinet	c:\data_reports\data\salmon\awl	
1983	Eastern	Aialik	Sockeye	Comm Catch	8	Archive cabinet	c:\data_reports\data\salmon\awl	
1983	Kamishak	Chenik Lake	• Sockeye	Comm Catch	5	Archive cabinet	c:\data_reports\data\salmon\awl	
1983	Southern	China Poot	Sockeye	Comm Catch	19	Archive cabinet	c:\data_reports\data\salmon\awl	
1983	Outer	Delight Lake	Sockeye	Comm Catch	3	Archive cabinet	c:\data_reports\data\salmon\awl	
1983	Outer	Desire Lake	Sockeye	Comm Catch	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1983	Southern	English Bay	Sockeye	Comm Catch	9	Archive cabinet	c:\data_reports\data\salmon\awl	

Appendix F cont'd (Inventory of archived LCI adult salmon scales: page 3 of 7)

				Sample	# of	Data/Scale	Electronic File	
Year	District	Location	Species	Туре	cards	Location	Location	Comments
1985	Outer	Nuka Bay	Sockeye	Comm Catch	5	Archive cabinet	c:\data_reports\data\salmon\awl	no acetate impressions
1985	Eastern	Tonsina Cr	Churn	Comm Catch	5	Archive cabinet	c:\data_reports\data\salmon\awl	
1986	Kamishak	Chenik Lake	Sockeye	Escapement.		Archive cabinet	c:\data_reports\data\salmon\awl	scales missing
1986	Southern	China Poot	Sockeye	Comm Catch	1.1.	Archive cabinet	c;\data_reports\data\salmon\awl	
1986	Kamishak	McNeil River	Chum	Comm Catch	2	Archive cabinet	c:\data_reports\data\salmon\awl	scales missing
1986	Southern	Kasitsna	Sockeye	Set net	6	Archive cabinet	c:\data_reports\data\salmon\awl	
1986	Kamishak	Mikfik Lake	Sockeye	Comm Catch	8	Archive cabinet	c:\data reports\data\salmon\awl	2 acetates missing
1988	Eastern	Aialik	Sockeye	Comm Catch	14	Archive cabinet	c:\data_reports\data\salmon\awl	en degen a tenado a Los españos en empreo en esperiente en 🚗 por to todo, é classica de difici.
1988	Kamishak	Chenik Lake	Sockeye	Escapement	36	Archive cabinet	c:\data_reports\data\salmon\awl	
1988	Southern	China Poot	Sockeye	Comm Catch	30	Archive cabinet	c:\data_reports\data\salmon\awl	
1988	Kamishak	Cottonwood	Chum	Comm Catch	12	Archive cabinet	c:\data_reports\data\salmon\awl	
1988	Kamishak	Iniskin	Chum	Comm Catch	1	Archive cabinet	c:\data_reports\data\salmon\awl	
1988	Kamishak	McNeil River	Chum	Comm Catch	27	Archive cabinet	c:\data_reports\data\salmon\awl	
1988	Outer	Nuka Bay	Sockeye	Comm Catch	10	Archive cabinet	c:\data_reports\data\salmon\awl	
1988	Kamishak	Mikfik Lake	Sockeye	Comm Catch	20	Archive cabinet	c:\data_reports\data\salmon\awl	
1988	Outer	Port Dick	Chum	Comm Catch	25	Archive cabinet	c:\data_reports\data\salmon\awl	
1988	Kamishak	Silver Beach	Chum	Comm Catch	13	Archive cabinet	c:\data_reports\data\salmon\awl	
1988	Eastern	Tonsina Cr	Chum	Comm Catch	21	Archive cabinet	c:\data_reports\data\salmon\awl	
1989	Eastern	Aialik	Sockeye	Comm Catch	23	Archive cabinet	c:\data_reports\data\salmon\awl	
1989	Kamishak	Chenik Lake	Sockeye	Escapement	12	Archive cabinet	c:\data_reports\data\salmon\awl	
1989	Southern	China Poot	Sockeye	Comm Catch	30	Archive cabinet	c:\data_reports\data\salmon\awl	
1989	Kamishak	Mikfik Lake	Sockeye	Comm Catch	15	Archive cabinet	· c:\data reports\data\salmon\awl	
1989	Outer	Nuka Bay	Sockeye	Comm Catch	11	Archive cabinet	c:\data_reports\data\salmon\awl	NA PARA TARAN
1990	Eastern	Aialik	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	Albertan Act dense Etistud of Ruff 2017 Cruze, Etiffskild i Mystel sig til 1917 fil for och
1990	Kamishak	Chenik Lake	Sockeye	Escapement	13	Archive cabinet	c:\data reports\data\salmon\awl	
1990	Kamishak	Chenik Lake	Sockeye	Escapement	12	Archive cabinet	c:\data_reports\data\salmon\awl	
1990	Southern	China Poot	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1990	Kamishak	Mikfik Lake	Sockeye	Comm Catch	12	Archive cabinet	c:\data_reports\data\salmon\awl	

Appendix F cont'd (Inventory of archived LCI adult salmon scales: page 4 of 7)

				Sample	# of	Data/Scale	Electronic File	
Year	District	Location	Species	Туре	cards	Location	Location	Comments
1990	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	7/5/1990
1990	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	7/11/1990
1991	Eastern	Aialik	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1991	Kamishak	Bruin Bay	Chum	Comm Catch	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1991	Kamishak	Chenik Lake	Sockeye	Escapement	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1991	Kamishak	Chenik Lake	Sockeye	Escapement	45	Archive cabinet	c:\data_reports\data\salmon\awl	
1991	Southern	China Poot	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	7/13/1991
1991	Southern	China Poot	Sockeye	Comm Catch	10	Archive cabinet	c:\data_reports\data\salmon\awl	7/18/1991
1991	Kamishak	Douglas River	Sockeye	Comm Catch	6	Archive cabinet	c:\data_reports\data\salmon\awl	
1991	Kamishak	Kamishak River	Chum	Comm Catch	2	Archive cabinet	c:\data_reports\data\salmon\awl	
1991	Kamishak	Kirschner Lk	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1991	Kamishak	Mikfik Lake	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1991	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1991	Outer	Port Dick	Chum	Comm Catch	2	Archive cabinet •	c:\data_reports\data\salmon\awl	
1991	Outer	Port Dick	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Kamishak	Bruin Bay	Chum	Comm Catch	4	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Kamishak	Chenik Lake	Sockeye	Escapement	27	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Kamishak	Chenik Lake	Sockeye	Ecapement	8	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Southern	China Poot	Sockeye	Comm Catch	8	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Kamishak	Cottonwood	Chum	Comm Catch	9	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Outer	Delight Lake	Sockeye	Comm Catch	1	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Southern	English Bay	Sockeye	Escapement	41	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Kamishak	Kirschner Lk	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Kamishak	Mikfik Lake	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Kamishak	McNeil River	Chum	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1992	Kamishak	Silver Beach	Chum	Comm Catch	7	Archive cabinet	c:\data_reports\data\salmon\awl	7/7/1992
1992	Kamishak	Silver Beach	Chum	Comm Catch	7	Archive cabinet	c:\data_reports\data\salmon\awl	7/31/1992
1992	Kamishak	Silver Beach	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	

				Sample	# of	Data/Scale	Electronic File	
Year	District	Location	Species	Туре	cards	Location	Location	Comments
1993	Kamishak	Chenik Lake	Sockeye	Escapement	24	Archive cabinet	c:\data_reports\data\salmon\awl	6/25/1993
1993	Kamishak	Chenik Lake	Sockeye	Escapement	15	Archive cabinet	c:\data_reports\data\salmon\awl	7/1/1993
1993	Southern	China Poot	Sockeye	Comm Catch	8	Archive cabinet	c:\data_reports\data\salmon\awl	
1993	Southern	English Bay	Sockeye	Escapement	44	Archive cabinet	c:\data_reports\data\salmon\awl	
1993	Kamishak	Kirschner Lk	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1993	Southern	Neptune Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1993	Kamishak	Mikfik Lake	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1993	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1993	Kamishak	Silver Beach	Sockeye	Comm Catch	6	Archive cabinet	c:\data_reports\data\salmon\awl	
1994	Kamishak	Chenik Lake	Sockeye	Escapement	11	Archive cabinet	c:\data_reports\data\salmon\awl	
1994	Southern	China Poot	Sockeye	Comm Catch	11	Archive cabinet	c:\data_reports\data\salmon\awl	
1994	Southern	English Bay	Sockeye	Escapement	1	Archive cabinet	c:\data_reports\data\salmon\awl	
1994	Southern	Hazel Lake	Sockeye	Escapement	1	Archive cabinet	c:\data_reports\data\salmon\awl	4 fish sample
1994	Kamishak	Kirschner Lk	. Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1994	Kamishak	McNeil River	Chum	Test Fish	2	Archive cabinet	c:\data_reports\data\salmon\awl	Fish taken in Lagoon
1994	Southern	Neptune Bay	Sockeye	Comm Catch	5	Archive cabinet	c:\data_reports\data\salmon\awl	
1994	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1994	Outer	Nuka Bay	Sockeye	Escapement	3	Archive cabinet	c:\data_reports\data\salmon\awl	Delight Lake
1994	Outer	Nuka Bay	Sockeye	Escapement	3	Archive cabinet	c:\data_reports\data\salmon\awl	Desire Lake
1994	Outer	Nuka Bay	Sockeye	Escapement	2	Archive cabinet	c:\data_reports\data\salmon\awl	Delusion Lake
1994	Eastern	Res. Bay	Sockeye	Comm Catch	13	Archive cabinet	c:\data_reports\data\salmon\awl	
1994	Kamishak	Silver Beach	Sockeye	Comm Catch	11	Archive cabinet	c:\data_reports\data\salmon\awl	
1995	Eastern	Alalik	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1995	Kamishak	Chenik Lake	Sockeye	Escapement	18	Archive cabinet	c:\data_reports\data\salmon\awl	
1995	Southern	China Poot	Sockeye	Comm Catch	7	Archive cabinet	c:\data reports\data\salmon\awl	7/28/1995
1995	Southern	China Poot	Sockeye	Comm Catch	7	Archive cabinet	c:\data_reports\data\salmon\awl	8/2/1995
1995	Outer	Delight Lake	Sockeye	Escapement	3	Archive cabinet	c:\data_reports\data\salmon\awl	
1995	Kamishak	Kirschner Lk	Sockeye	Comm Catch	16	Archive cabinet	c:\data_reports\data\salmon\awl	

Appendix F cont'd (Inventory of archived LCI adult salmon scales: page 6 of 7)

				Sample	# of	Data/Scale	Electronic File			
Year	District	Location	Species	Туре	cards	Location	Location	Comments		
1995	Kamishak	Mikfik Lake	Söckeye	Comm Catch	4	Archive cabinet	c:\data_reports\data\salmon\awl			
1995	Kamishak	McNeil River	Chum	Comm Catch	1	Archive cabinet	c:\data_reports\data\salmon\awl			
1995	Southern	Neptune Bay	Sockeye	Comm Catch	18	Archive cabinet	c:\data_reports\data\salmon\awl			
1995	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	6/27/1995		
1995	Outer	Nuka Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	6/30/1995		
1995	Outer	Nuka Bay •	Sockeye	Comm Catch	7	Archive cabinet	c:\data_reports\data\salmon\awl	7/11/1995		
1995	Eastem	Res. Bay	Sockeye	Comm Catch	10	Archive cabinet	c:\data_reports\data\salmon\awl			
1995	Eastern	Res. Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl			
1996	Kamishak	Chenik Lake	Sockeye	Escapement	23	Archive cabinet	c:\data_reports\data\salmon\awl			
1996	Southern	China Poot	Sockeye	Comm Catch	16	Archive cabinet	c:\data_reports\data\salmon\awl			
1996	Kamishak	Kirschner Lk	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl			
1996	Kamishak	McNeil River	Chum	Comm Catch	6	Archive cabinet	c:\data_reports\data\salmon\awi			
1996	Southern	English Bay	Sockeye	Escapement	15	Archive cabinet	c:\data_reports\data\salmon\awl	Cost Recovery		
1996	Southern	Neptune Bay	Sockeye	Comm Catch	11	Archive cabinet	c:\data_reports\data\salmon\awl			
1996	Outer	Nuka Bay	Sockeye	Comm Catch	11	Archive cabinet	c:\data_reports\data\salmon\awl	Delight Lk escapement		
1996	Eastern	Res. Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	6/4/1996		
1996	Eastern	Res. Bay	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl			
1997	Eastern	Alalik	Sockeye	Comm Catch	7	Archive cabinet	c:\data_reports\data\salmon\awl			
1997	Kamishak	Chenik Lake	Sockeye	Escapement	15	Archive cabinet	c:\data_reports\data\salmon\awl			
1997	Southern	China Poot	Sockeye	Comm Catch	7	Archive cabinet	c:\data_reports\data\salmon\awl	7/8/1997		
1997	Southern	China Poot	Sockeye	Comm Catch	7	Archive cabinet	c:\data_reports\data\salmon\awl	7/11/1997		
1997	Outer	Delight Lake	Sockeye	Escapement	19	Archive cabinet	c:\data_reports\data\salmon\awl	EVOS project		
1997	Outer	Desire Lake	Sockeye	Escapement	21	Archive cabinet	c:\data_reports\data\salmon\awl	EVOS project		
1997	Kamishak	Mikfik Lake	Sockeye	Comm Catch	6	Archive cabinet	c:\data_reports\data\salmon\awl			
1997	Southern	Neptune Bay	Sockeye	Comm Catch	13	Archive cabinet	c:\data_reports\data\salmon\awl			
1997	Eastern	Res. Bay	Sockeye	Comm Catch	6	Archive cabinet	c:\data_reports\data\salmon\awl			
1997	Kamishak	Silver Beach	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl			
998	Eastern	Bear Creek	Sockeye	Escapement	54	Archive cabinet	c:\data reports\data\salmon\awl	From CIAA		

Appendix F cont'd (Inventory of archived LCI adult salmon scales: page 7 of 7)

				Sample	# of	Data/Scale	· Electronic File	
Year	District	Location	Species	Туре	cards	Location	Location	Comments
1998	Southern	China Poot	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1998	Outer	Delight Lake	Sockeye	Escapement	20	Archive cabinet	c:\data_reports\data\salmon\awl	Escapement project
1998	Outer	Desire Lake	Sockeye	Comm Catch	3	Archive cabinet	c:\data_reports\data\salmon\awl	
1998	Eastern	Grouse Lake	Sockeye	Escapement	24	Archive cabinet	c:\data_reports\data\salmon\awl	poor quality, 7/20/98
1998	Eastern	Grouse Lake	Sockeye	Escapemenet	25	Archive cabinet	c:\data_reports\data\saimon\awl	8/15/19 98
1999	Southern	China Poot	Sockeye	Comm Catch	16	Archive cabinet	c:\data_reports\data\salmon\awl	TTT TA WAR IN THE STATE OF THE
1999	Kamishak	Mikfik Lake	Sockeye	Comm Catch	14	Archive cabinet	c:\data_reports\data\salmon\awt	
1999	Kamishak	Kirschner Lk	Sockeye	Comm Catch	7	Archive cabinet	c:\data_reports\data\salmon\awl	
1999	Outer	Desire Lake	Sockeye	Comm Catch	15	Archive cabinet	c:\data_reports\data\salmon\awl	
1999	Outer	Delight Lake	Sockeye	Escapement	. 19	Archive cabinet	c:\data_reports\data\salmon\awl	
1999	Outer	Delight Lake	Coho	Escapement	6	Archive cabinet	c:\data_reports\data\salmon\awi	

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Appendix G. Inventory of Lower Cook Inlet Sockeye and Chum salmon AWL data, 1983 through 1999.

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
SOCKEYE	:																
China Poot	C	С	С	C		C	С	C	C	С	С	C	С	С	С	C	С
Neptune Bay											C	C,E	C	C	C		
English Bay	C									E	Е	E		Е			
Chenik Lk	C	C	Е	C		E	E	Е	Е	E	Е	Е	E	E			
E. Nuka Bay		С	С			C	C	C	C		C	C	C				
Delight Lake										С		E	E	Е	Е	E	E
Desire Lk	E		C							· · · · · · · · · · · · · · · · · · ·		E			E	C	C
Kirschner Lk									C	C	C	C	C	C			С
Aialik	C	С	С			C	C	C	C				С		C		
Grouse Lake	-															Е	
Resurrection Bay		C										C	C	С	С		
Resurrection Bay (Bear Lk)																С	Е
Douglas River	1								C								
Silver Beach	C									C	C	С			С		
Mikfik Lake	С		С	C .		С	С	С	С	С	С		С		С		С
CHUM																	
McNeil River	C	С		С		C				C		С	C	E			
Cottonwood Cr						С				C							
Silver Beach				***************************************		С				С							
Iniskin River	C	С				C											
Tonsina Cr.	С		C			C											
Aialik Bay		С															
Kamishak River	C	С							C								
Resurrection Bay		C															
Port Dick Bay						C			C								
Bruin Bay								C		C							
Rocky Bay		C															
Ursus Bay		C -															

C = Commercial catch sample E= Escapement sample

Appendix H. Names and locations of files used to generate this report. All electronic files are housed on the current finfish research computer and archived on CD ROM.

File name	Subdirectory	Format	Description
99salmawl.rir.doc	C:\DATA_REPORTS\REPORTS/ SALMON\AWL	Word 2000	Text, tables and figures (minus appendices) for the 1999 LCI salmon AWL Regional Information Report.
99Appendix-A.doc	C:\DATA_REPORTS\REPORTS/ SALMON\AWL	Word 2000	China Poot age, mean weight and length by brood year and age group.
99Appendix-B.doc	C:\DATA_REPORTS\REPORTS/ SALMON\AWL	Word 2000	Nuka Bay age, mean weight and length by brood year and age group.
99Appendix-C.doc	C:\DATA_REPORTS\REPORTS/ SALMON\AWL	Word 2000	Aialik Lake age, mean weight and length by brood year and age group.
99Appendix-D.doc	C:\DATA_REPORTS\REPORTS/ SALMON\AWL	Word 2000	Chenik Lake age, mean weight and length by brood year and age group.
99Appendic-E.doc	C:\DATA_REPORTS\REPORTS/ SALMON\AWL	Word 2000	Mikfik Lake age, mean weight and length by brood year and age group.
99Appendix_F.doc	C:\DATA_REPORTS\REPORTS/ SALMON\AWL	Excel 2000	LCI Adult salmon scale archive
99Appendix-G.doc	C:\DATA_REPORTS\REPORTS/ SALMON\AWL	Word 2000	Inventory of LCI salmon AWL data, 1983-1999

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